

Final Environmental Assessment  
Tanner Electric Transmission Line Project

Bonneville Power Administration

August 2000

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# **Tanner Electric Transmission Line Project**

**Responsible Agency:** U.S. Department of Energy, Bonneville Power Administration (BPA)

**Name of Proposed Project:** Tanner Electric Transmission Line Project

**Abstract:** BPA proposes to construct 7 kilometers (4.5 miles) of new 115-kV transmission line in King County, Washington. The new line, which would tap Puget Sound Energy's (Puget's) Snoqualmie-Lake Tradition No. 1 Transmission Line, would be supported on a combination of single wood pole and H-frame wood pole structures. As a connected action, Tanner Electric Cooperative (Tanner) would construct a 115/12.5-kV substation in the City of North Bend, Washington, which would receive power from BPA's proposed transmission line.

BPA also is considering the No Action Alternative. If BPA does not take action to build the transmission line, it is possible that the same or similar facilities as described in the Proposed Action would be constructed by another utility. Alternatively, if such facilities were not constructed, both Tanner and Puget would, over time, see a degradation of service to existing customers and an inability to serve new customers in the future.

The comments received on the Preliminary Environmental Assessment and responses to the comments are in Chapter 8. Major changes to the Preliminary EA are underlined. Simple editorial changes are not marked.

The final environmental assessment identifies minor, short-term, and/or mitigable changes to erosion levels, water quality, vegetation, wetlands and floodplains, magnetic fields, and views from transportation facilities and individual residences.

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## TABLE of CONTENTS

<b>CHAPTER 1 PURPOSE OF AND NEED FOR ACTION.....</b>	<b>1</b>
1.1 UNDERLYING NEED FOR ACTION.....	1
1.2 PURPOSES.....	2
1.3 OTHER PROJECTS IN THE AREA .....	2
1.4 PUBLIC INVOLVEMENT .....	3
<b>CHAPTER 2 ALTERNATIVES INCLUDING THE PROPOSED ACTION.....</b>	<b>5</b>
2.1 PROPOSED ACTION.....	5
2.1.1 Proposed Line Route .....	6
2.1.2 Proposed Line Design .....	6
2.1.3 Proposed Right-of-way.....	6
2.1.4 Proposed Substation .....	7
2.2 NO ACTION ALTERNATIVE .....	7
2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED .....	7
2.3.1 Alternative Route Segments.....	7
2.3.2 Underground Alternative.....	10
2.4 COMPARISON OF ALTERNATIVES .....	11
<b>CHAPTER 3 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND MITIGATION MEASURES.....</b>	<b>13</b>
3.1 INTRODUCTION AND SUMMARY OF IMPACTS .....	13
3.2 LAND USE .....	13
3.2.1 Affected Environment .....	13
3.2.2 Environmental Consequences .....	15
3.2.3 Cumulative Impacts.....	16
3.2.4 Mitigation .....	16
3.3 GEOLOGY/SOILS .....	17
3.3.1 Affected Environment .....	17
3.3.2 Environmental Consequences .....	17
3.3.3 Cumulative Impacts.....	18
3.3.4 Mitigation .....	18
3.4 WATER QUALITY .....	19
3.4.1 Affected Environment .....	19
3.4.2 Environmental Consequences .....	19
3.4.3 Cumulative Impacts.....	20
3.4.4 Mitigation .....	20

<b>3.5 VEGETATION .....</b>	<b>21</b>
3.5.1 Affected Environment .....	21
3.5.2 Environmental Consequences .....	22
3.5.3 Cumulative Impacts.....	23
3.5.4 Mitigation .....	23
<b>3.6 WETLANDS AND FLOODPLAINS .....</b>	<b>24</b>
3.6.1 Affected Environment .....	24
3.6.2 Environmental Consequences .....	24
3.6.3 Cumulative Impacts.....	25
3.6.4 Mitigation .....	25
<b>3.7 FISH AND WILDLIFE .....</b>	<b>26</b>
3.7.1 Affected Environment .....	26
3.7.2 Environmental Consequences .....	27
3.7.3 Cumulative Impacts.....	27
3.7.4 Mitigation .....	28
<b>3.8 VISUAL QUALITY .....</b>	<b>28</b>
3.8.1 Affected Environment .....	29
3.8.2 Environmental Consequences .....	29
3.8.3 Cumulative Impacts.....	32
3.8.4 Mitigation .....	32
<b>3.9 SOCIOECONOMICS.....</b>	<b>33</b>
3.9.1 Affected Environment .....	33
3.9.2 Environmental Consequences .....	35
3.9.3 Cumulative Impacts.....	38
3.9.4 Mitigation .....	38
<b>3.10 CULTURAL RESOURCES.....</b>	<b>38</b>
3.10.1 Affected Environment .....	38
3.10.2 Environmental Consequences .....	39
3.10.3 Cumulative Impacts.....	39
3.10.4 Mitigation.....	39
<b>3.11 HEALTH AND SAFETY .....</b>	<b>39</b>
3.11.1 Affected Environment .....	39
3.11.2 Environmental Consequences .....	41
3.11.3 Mitigation.....	43
<b>3.12 NOISE AND RADIO/TV INTERFERENCE.....</b>	<b>43</b>
3.12.1 Audible Noise.....	43
3.12.2 Radio and Television Interference.....	44
3.12.3 Environmental Noise .....	44
3.12.4 Mitigation.....	45
 <b>CHAPTER 4 ENVIRONMENTAL CONSULTATION AND PERMIT REQUIREMENTS .....</b>	 <b>47</b>
<b>4.1 NATIONAL ENVIRONMENTAL POLICY ACT .....</b>	<b>47</b>
<b>4.2 ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT.....</b>	<b>47</b>

<b>4.3 FISH AND WILDLIFE CONSERVATION.....</b>	<b>47</b>
<b>4.4 HERITAGE CONSERVATION.....</b>	<b>48</b>
<b>4.5 STATE, AREAWIDE AND LOCAL PLAN AND PROGRAM CONSISTENCY .....</b>	<b>48</b>
4.5.1 Memorandum of Agreement (between BPA and WDOE) on State and Local Government Review of BPA Projects in the State of Washington 1990 .....	48
4.5.2 Washington State Law .....	48
4.5.3 King County Plans and Ordinances.....	50
4.5.4 City of North Bend Plans and Ordinances.....	52
<b>4.6 COASTAL ZONE MANAGEMENT ACT CONSISTENCY .....</b>	<b>53</b>
<b>4.7 WETLAND AND FLOODPLAIN PROTECTION .....</b>	<b>54</b>
<b>4.8 FARMLAND PROTECTION POLICY ACT.....</b>	<b>54</b>
<b>4.9 PERMITS FOR DISCHARGES INTO WATERS OF THE UNITED STATES .....</b>	<b>54</b>
<b>4.10 GLOBAL WARMING .....</b>	<b>54</b>
<b>4.11 THE EXECUTIVE ORDER ON ENVIRONMENTAL JUSTICE .....</b>	<b>55</b>
<b>4.12 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA) .....</b>	<b>55</b>
<b>4.13 RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) .....</b>	<b>55</b>
<b>4.14 REQUIREMENTS NOT APPLICABLE TO THIS PROJECT.....</b>	<b>56</b>
<b>CHAPTER 5 PERSONS AND AGENCIES CONSULTED.....</b>	<b>57</b>
<b>CHAPTER 6 GLOSSARY.....</b>	<b>59</b>
<b>CHAPTER 7 REFERENCES .....</b>	<b>63</b>
<b>CHAPTER 8 PUBLIC/AGENCY COMMENTS AND RESPONSES .....</b>	<b>67</b>
PURPOSE AND NEED (CHAPTER 1) .....	67
ALTERNATIVES INCLUDING THE PROPOSED ACTION (CHAPTER 2).....	68
LAND USE (CHAPTER 3) .....	72
GEOLOGY AND SOILS (CHAPTER 3).....	83
WATER QUALITY (CHAPTER 3).....	84
VEGETATION (CHAPTER 3) .....	87
WETLANDS/FLOODPLAINS (CHAPTER 3).....	94
FISH AND WILDLIFE (CHAPTER 3) .....	96

<b>VISUAL QUALITY (CHAPTER 3).....</b>	<b>97</b>
<b>SOCIOECONOMICS (CHAPTER 3).....</b>	<b>106</b>
<b>CULTURAL RESOURCES (CHAPTER 3).....</b>	<b>109</b>
<b>HEALTH AND SAFETY (CHAPTER 3) .....</b>	<b>110</b>
<b>NOISE AND RADIO/TV INTERFERENCE (CHAPTER 3).....</b>	<b>111</b>
<b>ENVIRONMENTAL CONSULTATION AND PERMIT REQUIREMENTS (CHAPTER 4) .....</b>	<b>113</b>
<b>OTHER .....</b>	<b>116</b>

## **APPENDIX A CULTURAL RESOURCE ASSESSMENT**

## **APPENDIX B ENVIRONMENTAL NOISE ANALYSIS**

## **APPENDIX C MITIGATION ACTION PLAN**

### **Figures, Photos and Tables following page**

Figure 1 Project Location .....	3
Figure 2 Proposed Action .....	3
Figure 3 Wood Pole Design.....	3
Figure 4 Alternatives Excluded .....	5
Figure 5 Land Use .....	11
Figure 6 Zoning .....	11
Figure 7 Right-of-Way Alignment Detail Near SE 356th Avenue.....	11
Figure 8 Wetlands/Floodplains.....	22
Figure 9 Photo Simulations of View Corridors .....	27
Figure 10 Magnetic Field Profiles .....	40
Figure 11 Magnetic Field Profiles .....	40
Figure 12 Magnetic Field Profiles .....	40
Figure 13 Magnetic Field Profiles .....	40
Photo Pair 1 .....	27
Photo Pair 2 .....	27
Photo Pair 3 .....	27
Photo Pair 4 .....	27
Photo Pair 5 .....	
27	
Photo Pair	
6.....	27

	<b>on page</b>
Table 1 Predicted Performance Summary .....	11
Table 2 Summary of Impacts of the Proposed Action.....	14
Table 3 Typical Electric and Magnetic Field Strengths from BPA Transmission Lines .	41

## Chapter 1 Purpose of and Need for Action

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### 1.1 UNDERLYING NEED FOR ACTION

Bonneville Power Administration (BPA) is a federal agency within the U. S. Department of Energy (DOE). BPA markets wholesale electric power and operates and markets transmission services in the Pacific Northwest. BPA's customers include publicly-owned and investor-owned utilities, as well as large industrial customers, such as aluminum plants. BPA also sells or exchanges power with utilities in Canada and the western United States.

Tanner Electric Cooperative (Tanner), a **non-generating public utility**<sup>1</sup> and a **full requirements customer** of BPA, requires additional power and new facilities to serve its customers in and around the city of North Bend, Washington.

Tanner presently receives all of its power from BPA. Puget Sound Energy (Puget), an investor-owned utility, **wheels** it for BPA over Puget's 115-kilovolt (115-kV) transmission system. Tanner takes delivery of the power at Puget's North Bend **Substation**. From there, Tanner distributes the power on its 12.5-kV system to its retail customers in the North Bend area.

In December 1998, Tanner's North Bend **load** peaked at 8,045 kilowatts (kW) during a three-day cold snap in which low temperatures in the Puget Sound area were at a normal level for the winter. The remainder of the 1998/99 winter was relatively mild, as was the winter of 1999/2000. This means that the Puget Sound area has not experienced normal winter low temperatures since December 1998. Given Tanner's customer growth since December 1998, a peak load of approximately 9,000 – 10,000 kW is expected under normal winter low temperatures. Electrical loads at North Bend are growing at about 5 percent annually.

To meet the needs of existing Tanner customers at North Bend, BPA has an interim transmission service agreement with Puget with a contract demand of 8,000 kW; however, if a critical element of the transmission system in the area were out of service for any reason, Tanner's winter peak load requirement could not be met. Under this condition, electrical load in the North Bend area would be curtailed, affecting both Tanner and Puget customers. Serving loads in this manner does not meet BPA's reliability criteria. In order to supply firm reliable power to the North Bend area, additional **capacity** is needed.

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<sup>1</sup> Words or phrases within sentences shown in **boldface type** are defined in the glossary (Chapter 6).

## 1.2 PURPOSES

In satisfying the underlying need for action, BPA would like to achieve the following purposes:

- Maximize overall system efficiency through one-utility planning.
- Minimize impacts to the **human environment**.
- Minimize costs.

## 1.3 OTHER PROJECTS IN THE AREA

**BPA Projects.** To effectively operate the system in a reliable manner, BPA must occasionally rebuild or expand portions of existing facilities, or add new facilities, after first determining the efficiencies that could be achieved through conservation, load sharing or leasing other's under-utilized transmission lines in the area.

The proposed project closest to the North Bend area is the re-termination of the existing Schultz-Raver 500-kV line into BPA's Echo Lake Substation, located a few miles southwest of the city of Snoqualmie, Washington. This project requires construction of approximately 15 kilometers (9.5 miles) of new 500-kV transmission line into the Echo Lake Substation from the south. BPA has initiated an environmental review of the proposed action under the **National Environmental Policy Act** (NEPA). The environmental impact statement (EIS) on that project will be available for public review in summer 2001. When the environmental process is complete, BPA will decide whether to proceed with the action. If BPA elects to build the project, construction probably would take place in 2002.

Although no additional BPA projects have been funded for the immediate project area, BPA system planners continually study the system to identify the facilities that might be needed in the future to ensure safe and reliable operations. Once a need is identified, BPA undertakes an environmental review, including public notification and consultation, before making a decision on a proposal.

**Puget Projects.** To continue to serve its customers in the area, Puget proposes to either add a second transformer to the proposed Tanner Substation, or lease a second transformer from Tanner when needed to serve future loads. Puget may also locate a new substation (the Mt. Si Substation) in the general vicinity of the proposed tap point. Puget's current planning indicates that a new substation may be needed in this area to serve the Snoqualmie Ridge and surrounding area by 2003, although no decision has been made to do so, and no site has been acquired. If a decision were made to go forward with this proposal, Puget would undertake its own environmental review and seek its own permits from the affected local governmental jurisdiction. For more information, please contact Puget Sound Energy or refer to the King County Comprehensive Plan.

## **1.4 PUBLIC INVOLVEMENT**

BPA released the Preliminary Environmental Assessment for a 30-day public and agency review in May 2000. During that time, BPA received comments orally, via e-mail, and by letter. In addition, BPA received comments at a public open house held in the City of North Bend, Washington on Monday, June 5th, mid-way through the comment period.

All of the comments received during the review period, as well as those that came in following “close of comments,” are in Chapter 8, organized by chapters of the Preliminary EA. Responses to the comments are also in Chapter 8.

As a result of the comments received, changes to the Preliminary EA have been made in this Final EA. Substantive changes to the document have been underlined.



## Chapter 2 Alternatives Including the Proposed Action

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### 2.1 PROPOSED ACTION

To meet the need described in Section 1.1, BPA proposes to construct a new 7-kilometer (4.5-mile), 115-kV **single-circuit** electric power **transmission line** in unincorporated King County and in the City of North Bend, Washington, to be energized in the fall of 2001. As a **connected action**, Tanner would construct a 115-kV/12.5-kV substation in North Bend, Washington that would be named Tanner Substation. (See Figures 1 and 2 for locations of the proposed transmission line route and substation.)

Puget's Snoqualmie-Lake Tradition No. 1 115-kV transmission line, near Snoqualmie, has capacity to meet the load requirements described in Section 1.1. BPA proposes to **tap** this transmission line near its intersection with BPA's Echo Lake-Monroe 500-kV transmission line and to deliver the power to Tanner's proposed Tanner Substation.

In June 1999, BPA entered into an agreement with Tanner and Puget to provide power to Tanner at Tanner's proposed substation site, subject to environmental analysis and other processes. The agreement (North Bend Settlement Agreement) contemplates that BPA design and construct the proposed transmission line to accommodate an electrical **distribution** line for Puget on its proposed transmission pole structures (called an "**underbuild**") (Figure 3), assuming Puget obtains the rights from the property owners to do so. Tanner also plans to provide space for a transformer bay within Tanner Substation for future use by Puget.

Aspects of the proposed line:

- Existing BPA **right-of-way**  
Total distance: 1 km (0.6 mi)  
Width: 8 meters (27.5 feet)
- New right-of-way on private land  
Total distance: 2 km (1.3 mi)  
Width: 7 - 15 m (22.5 - 50 ft)
- Use of public rights-of-way on state land (I-90 right-of-way), county right-of-way (North Bend Way), and city rights-of-way (North Bend Way and Alm Way)  
Total distance: 4 km (2.6 mi)  
Width: 15 m (50 ft)
- A single-wood-pole design (Figure 3), except in one location (see Section 2.1.2)
- Construction of approximately 2 km (1.25 mi) of new access roads.

The transmission line would cost approximately \$3.4 million.

The proposed substation would:

- Use 2.1 hectares (5.3 acres) of land owned by Tanner Electric Cooperative
- Construct approximately 30 m (100 ft) of new access road across Tanner property
- Cost approximately \$1.2 million.

### ***2.1.1 Proposed Line Route***

Figure 2 shows the proposed route. BPA would tap Puget's Snoqualmie-Lake Tradition No. 1 115-kV transmission line near where BPA's existing Echo Lake-Monroe 500-kV transmission line crosses Puget's line. From this point, the proposed route would proceed south using the western side of BPA's existing 45-m (150-ft) wide right-of-way for approximately 1 km (0.6 mi) to a point where 356<sup>th</sup> Avenue SE jogs to the west. The line would also veer west and then continue south on the west side of SE 356<sup>th</sup> Avenue to a point just north of SE 96<sup>th</sup> Street. From this point, the line would proceed in a southeasterly direction on the south side of SE 96<sup>th</sup> Way (a private road) before entering the I-90 state right-of-way.

The line would continue eastward in the I-90 right-of-way for approximately 0.8 km (0.6 mi) before joining North Bend Way on county-owned right-of-way. The route would continue in an easterly direction on the north side of North Bend Way to approximately Kimball Creek. From there the line would cross the road and proceed in a southeasterly direction on the south side of North Bend Way until a point about 245 m (800 ft) past the intersection with Alm Way in North Bend. From this point, the line would turn south to the north side of Alm Way and continue southeasterly until it crossed Alm Way to enter Tanner Substation.

### ***2.1.2 Proposed Line Design***

Figure 3 shows the project's existing and proposed transmission structures. The transmission line would be supported primarily by single wood pole structures, spaced approximately 62-78 m (225-250 ft) apart. The structures would be 20-23 m (65-75 ft) tall. Figure 3 shows how they would look with Puget's distribution line and a telephone line on the same poles. In one location (where the new line would cross under BPA's 500-kV line), horizontal placement of **conductors** would be necessary, thus requiring use of H-frame wood-pole structures 14 m (47.5 ft) tall.

### ***2.1.3 Proposed Right-of-way***

On most land, BPA would acquire a 15-m (50-ft) right-of-way. The exception is where an 8-m (27.5-foot) portion of an adjoining BPA right-of-way could be used near the city of Snoqualmie, in which case a narrower right-of-way (7 m [22.5 feet]) would be needed. For the entire line, BPA would require a 15-m (50-ft) wide cleared area, plus the removal of "danger trees." Danger trees are those trees outside of the right-of-way that could grow into or fall into the line within the next five years. Although tree clearing within the fifty foot clear-zone would need to be done in most areas, removing danger trees would be undertaken only where necessary.

### **2.1.4 Proposed Substation**

Tanner would build a 115/12.5-kV substation on an undeveloped 2.1 ha (5.3 ac) triangular-shaped parcel the utility recently acquired from Puget. The substation site is located off Alm Way in North Bend. It would be bounded by Alm Way on the north, Gardiner Creek on the west, and NW 8<sup>th</sup> Street on the south. The substation would be oriented to Alm Way, set back approximately 18 m (60 ft) from the road. It would be surrounded by an 2.4-m (8-ft) tall fence, 49 m (160 ft) long and 38 m (125 ft) wide, and would be landscaped. The fenced area would accommodate future use by Puget.

## **2.2 NO ACTION ALTERNATIVE**

The National Environmental Policy Act of 1969, as amended (NEPA), requires that federal agencies consider the consequences of not taking a proposed action (the No Action Alternative) before making a decision that may have an effect on the environment. The rationale for evaluating "No Action" is to provide a benchmark that enables decision-makers to compare the magnitude of the environmental effects of the Action Alternative compared to doing nothing.

If BPA took no action to serve the need identified in Section 1.1, because Puget's power forecasts indicates a need for an additional substation in North Bend, Puget likely would build a substation at the North Bend site anyway. (Puget sold the site to Tanner as part of the agreement described in Section 2.1.) Because its existing 115-kV system also is near capacity, Puget also probably would construct a transmission line to serve the substation, which could likely follow the alignment as described in the Proposed Action.

Therefore, the No Action Alternative would likely result in the construction by another entity of nearly the same facilities as described in the Proposed Action. If no new facilities were constructed by any entity, service to Tanner and Puget customers would deteriorate and both utilities would be unable to serve new customers.

## **2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED**

### **2.3.1 Alternative Route Segments**

BPA analyzed a number of alternative route segments before selecting a proposed route. The alternative segments and the reasons they were eliminated are described below. Figure 4 shows their location relative to the proposed route.

**Segment A (Quadrant Alternative).** This alternative would construct the 115-kV line approximately 150 m (500 ft) west of BPA's existing transmission line from the proposed tap point south for approximately 0.8 km (0.5 mi). The Quadrant Alternative is so named because the segment would cross the 30 ha (73-ac) Snoqualmie Ridge Business Park on land owned by the Quadrant Corporation. The route would be approximately 150 m (500 ft) west of BPA's existing Echo Lake-Monroe 500-kV transmission line in the city of Snoqualmie. The line would tap Puget's 115-kV transmission line approximately 150 m

(500 ft) west of the currently proposed tap point, proceed south across the east side of the Business Park, and cross D Creek to a point where the project, as proposed, would cross to the west side of the SE 356<sup>th</sup> Avenue.

This alternative has been dropped from further consideration primarily due to high land costs, and secondarily for environmental reasons. Quadrant, the development arm of the Weyerhaeuser Corporation, received approval from the City of Snoqualmie for the development and has recently completed necessary infrastructure improvements. The company now is marketing building sites within the business park. BPA appraisers have estimated that the cost of acquiring right-of-way within the business park would approach \$2 million over the cost of the entire project (\$3.4 million).

The alternative would also require clearing substantially more vegetation where the line crosses D Creek, a forested wetland in the city of Snoqualmie, than would using existing BPA right-of-way in this area.

**Segment B (I-90 Alternative).** This alternative would locate the proposed transmission line on the north side of the I-90 corridor for approximately 1.6 km (1 mi) before entering the North Bend Way right-of-way. The alternative was dropped from further consideration primarily because of input from the Washington State Department of Transportation (WSDOT). Although it allows utility crossings, WSDOT has a policy against utilities siting facilities parallel to the road within state rights-of-way unless no reasonable alternatives exist for doing so (Tim Wicks, Permit/Franchise Engineer, WSDOT, pers. comm., February 12, 1999). Placing utilities in state rights-of-way could compromise the safety of the travelling public. Even though a portion of the proposed route is located in the state right-of-way (there were no reasonable alternatives for siting the line at that location), there is an alternative to Segment B (i.e., along SE 96<sup>th</sup> Way, a private road). Because an alternative exists to minimize the amount of the transmission line within the state right-of-way, Segment B was dropped from further consideration.

**Segment C (Overland Alternative).** This alternative would head eastward from a point just north of SE 89<sup>th</sup> Place to a point just east of SE 372<sup>nd</sup> Avenue. The segment would then head south along the east side of SE 372<sup>nd</sup> Avenue to North Bend Way.

Approximately 1000 m (3200 ft) of this alternative would involve clearing a right-of-way over steep terrain that is prone to landslides, as identified by King County (Figure 4). The King County Sensitive Areas Ordinance (Section 47) identifies "Landslide Hazard Areas" as those areas that are subject to a severe risk of landslide. This alternative also crosses D and Coal creeks. Because of the steep terrain, BPA probably would need to construct H-frame wood pole structures over the creeks. H-frame structures normally require a wider right-of-way than do single wood pole structures; therefore, additional clearing likely would be required. The terrain's steepness also probably would require switchbacks in the road needed to access each of the structures. These switchbacks would require additional clearing and land rights beyond those needed for access roads on relatively flat terrain. For these reasons, this segment was dropped from further consideration.

**Segment D (Southern Alternative).** BPA was asked by a group of affected property owners on SE 96<sup>th</sup> Way to locate the transmission line further south to avoid affecting the residents on the north side of the I-90 right-of-way. This alternative would require two

crossings of the I-90 right-of-way within an area overseen by the Mountains to Sound Greenway Trust (Greenway Trust): one near mile 26 and another a half-mile farther east. The Greenway Trust is a 144-km (90-mi) stretch of I-90 that has been designated a National Scenic Byway, the only interstate highway in the United States to be so designated. It begins at scenic and historic sites along the Seattle waterfront and continues through suburban, rural and mountain landscapes to the historic town of Thorp, in central Washington. The Greenway Trust guides and coordinates actions to protect and enhance the environmental and scenic elements of the I-90 corridor.

The alternative would require acquisition of an easement from three landowners on the south side of the state right-of-way, one of which is reluctant to grant BPA an easement due to a pending transfer of title to the Land for Public Trust. The parcel is being acquired as part of the Greenway. It would be maintained in its natural state, protected from urban encroachment, in perpetuity (Nancy Keith, Executive Director, Mountains to Sound Greenway Trust, written communication, August 13, 1999). A high voltage transmission line across the parcel would be at odds with this use.

In addition, at the eastern I-90 crossing, spanning both the highway and the North Bend Way on-ramp would be difficult due to the distance and relatively flat topography at this location. WSDOT would be unlikely to approve a structure between the east- and west-bound lanes of I-90 for safety reasons, so structures at this crossing would need to be unusually tall to maintain the required electrical clearances.

Other reasons for eliminating this alternative are: (a) the amount of additional private land (approximately fifty percent more than the proposal) that would need to be acquired (as opposed to locating the transmission line mostly on public right-of-way); and (b) the additional half-mile length of the transmission line (which would increase both construction costs as well as **electrical line losses**).

**Segment E (South Side of North Bend Way Alternative).** A group of property owners near SE 372<sup>nd</sup> Avenue asked BPA to locate the transmission line on the south side of North Bend Way instead of on the north side. In this location, the transmission line would be on one side of the road and the distribution system on the other, creating a "tunnel" effect to motorists and other users of North Bend Way. Puget's distribution lines could, in theory, have been under-built on the BPA transmission poles. However, Puget is reluctant to move their distribution system to the south side of the county road because their customers in this area are on the north side.

This alternative also would increase materials costs by approximately \$120,000, due to the need to install steel poles along the curved portion of the road. Using wood poles on the south side of North Bend Way in this location would require that they be guyed to anchors on the north side of the road in order to offset the tension placed on them by the curve. Unlike wood poles, steel poles would not need to be guyed, but they cost more. The increased cost would not meet one of the project purposes, to minimize costs.

**Segment F (Island Alternative).** BPA was asked by a property owner to look at an alternative route between North Bend Way and I-90, to minimize visual impacts to residents near SE 372<sup>nd</sup> and North Bend Way.

This alternative would require a large amount of clearing on both state and county land, including many large trees (some more than 90 centimeters [36 inches] in diameter). By contrast, the proposal is located in the county right-of-way on the north side of North Bend Way, where clearing for the paved surface and a distribution line has already been done. The proposal therefore requires clearing on only one side of the line, whereas Segment F would require clearing on both sides of the line.

This route also would cross terrain with relatively steep gradients, i.e., slopes greater than 20 percent. Slopes greater than 15 percent normally require switchbacks to allow utility vehicles access to transmission poles and structures. Switchbacks in this area probably would require that the access roads be constructed outside of the 15-m (50-foot) cleared area, adding to the clearing identified above.

In addition, a WSDOT representative indicated to BPA that they would be reluctant to support a line within the state right-of-way at this location, because a reasonable alternative exists (Tim Wicks, personal communication, December 1999). King County also was reluctant to support this alternative due to the amount of clearing that would be required (Tom Henry, personal communication, March 2000). Because of the steepness of the terrain, the amount of clearing required, and the reluctance of the state and county to support the line in this location, the segment was dropped from further consideration.

**Segment G (Alm Way Alternative).** In this alternative, the line would be located along the north side of Alm Way (without crossing the Snoqualmie Valley Railroad tracks). This alternative would unnecessarily impact the residents along Alm Way just outside of North Bend, whereas there are no residents to be affected along North Bend Way in this area. Impacts would include clearing of the vegetation between the Snoqualmie Valley Railroad tracks and the residents along Alm Way; and acquisition of additional right-of-way from the residents to anchor guy lines in their front yards, unless significantly larger wood or steel poles would be used that would not need to be guyed. For these reasons, the segment was dropped from further consideration.

**Segment H (North Bend Way Substation Entrance Alternative).** At the request of some residents along Alm Way, BPA considered continuing down North Bend Way past Alm Way for approximately 600 m (2000 ft) before turning into the proposed substation. The alternative would require more clearing than the proposal, including the large spruce trees near a memorial at Gardiner Creek. It would also have negative impacts on views of Mt. Si from the Snoqualmie Valley Railroad. The alternative was dropped from further consideration because of the amount of clearing that would be necessary along North Bend Way, when an alternative existed nearby (the "Split Alternative"). The Split Alternative, which is now the part of the proposal and which modifies Segment H (see Figure 4), crosses Alm Way and continues down North Bend Way for about 245 m (800 ft) beyond Alm Way (instead of 600 m [2000 ft]).

### ***2.3.2 Underground Alternative***

BPA was asked to consider placing an unspecified portion of the transmission line underground to mitigate the visual impacts to residents along North Bend Way near SE 372nd. Putting a high-voltage transmission line underground is considerably more

expensive than building a line overhead, even with the new technology that replaces oil-filled conduits with dielectric insulation. While the new technology avoids using oil to dissipate heat, its cost is similar to the cost of using the oil-filled conduits without an oil pumping station. Depending on the length of the underground line (typically, the longer the distance underground, the less it costs per linear foot), design, materials and construction costs probably would be about \$400 per linear foot, compared to about \$60 per linear foot for an overhead line. Assuming a distance of 1,200 m (4,000 ft), undergrounding likely would cost an additional \$1.3-1.4 million over the cost of an overhead line. Because this alternative would add significant costs to the proposed project, it was dropped from further consideration.

## 2.4 COMPARISON OF ALTERNATIVES

Table 1 compares the Proposed Action and the No Action Alternative based on the purposes of the project described in Section 1.2.

**Table 1 Predicted Performance Summary**

Purposes	Proposed Action	No Action
Maximize overall system efficiency through one-utility planning.	One transmission line and substation serve most foreseeable customer service needs of all 3 electrical utilities in the area.	Does not meet customer service needs of all 3 electrical utilities in the area. <u>Duplicate facilities may be constructed to serve customer needs.</u>
Minimize impacts to the human environment.	Most impacts are minor, short-term, and/or can be mitigated.	Impacts could be similar to Proposed Action if another entity builds facilities. If facilities are not constructed, <u>the result could be power outages.</u>
Minimize costs.	BPA costs: \$3.4 million Tanner costs: \$2.1 million	BPA costs: \$0. Unknown costs to other utilities.



## Chapter 3 Affected Environment, Environmental Consequences, And Mitigation Measures

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### 3.1 INTRODUCTION AND SUMMARY OF IMPACTS

Table 2 provides a summary of the impacts of the proposed action. Subsequent sections in this chapter provide more detail, resource by resource, about those impacts. Each section first describes the environment that could be affected by the alternatives, and then the impacts, including cumulative impacts, of the proposal. Relevant mitigation measures are described at the end of each section. Impacts of No Action would vary, depending on whether or not another entity builds the facilities. Those impacts could be similar to the proposal or could be limited to the socioeconomic effects of not supplying electricity demands (Section 2.2).

### 3.2 LAND USE

#### *3.2.1 Affected Environment*

The project area is located in a rural part of central King County, Washington. Figure 5 shows the principal types of land use in the project area. Land is principally under private ownership, and includes developed and undeveloped rural-residential parcels, a number of residential subdivisions in various stages of development, and a relatively new business park that is currently marketing building sites. Public land in the area is used primarily for rights-of-way, including city (Snoqualmie and North Bend) and King County roads as well as Interstate Highway 90 (I-90). Four small creeks are in the immediate project area: D, Coal, Kimball, and Gardiner creeks. Adjacent to Gardiner Creek, within the North Bend right-of-way, a memorial shrine marks the location where a North Bend High School student recently died in an automobile accident. The South Fork of the Snoqualmie River is about 1 km (0.6 mi) east of the proposed substation.

Land uses in the immediate project vicinity are mostly rural residential property in unincorporated King County and more urbanized uses within the communities of Snoqualmie and North Bend. Unincorporated land is zoned primarily RA-5 (Rural-Residential, 5 acre minimum) and UR (Urban Reserve) (Figure 6).

BPA has an existing high-voltage transmission line in the area, the Echo Lake-Monroe 500-kV line, which occupies a 45-m (150-ft) right-of-way (see [Figure 7, Right-of-Way Alignment Detail Near SE 356<sup>th</sup> Avenue](#)). In addition, Puget has two existing 115-kV transmission lines in the area, one of which BPA proposes to tap for this project (Snoqualmie-Lake Tradition No. 1). (See Figure 1.)

Puget also has a 12.5-kilovolt (12.5-kV) distribution line in the area that serves the utility's customers. It takes power out of the North Bend Substation, and parallels North Bend Way and Alm Way. No high-voltage lines currently exist along North Bend Way,

and no distribution line currently exists along North Bend Way between Alm Way and downtown North Bend.

**Table 2 Summary of Impacts of the Proposed Action**

<b>Resource</b>	<b>Impacts</b>
<b>Land Use</b>	<ul style="list-style-type: none"> <li>• Right-of-way and substation remove 3.3 ha (8.3 ac) of land from other potential development.</li> <li>• Right-of-way limits uses on several properties.</li> <li>• Transmission line is added to public road rights-of-way where no line currently exists or replaces an existing distribution line with a larger facility.</li> </ul>
<b>Geology/Soils</b>	<ul style="list-style-type: none"> <li>• Minor, short-term increases in erosion and run-off rates, controlled by Best Management Practices (BMPs).</li> </ul>
<b>Water Quality</b>	<ul style="list-style-type: none"> <li>• Same as geology/soils.</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>• 6.4 ha (16 ac) tall-growing conifers and deciduous trees are replaced with low-growing vegetation.</li> </ul>
<b>Wetlands/Flood-plains</b>	<ul style="list-style-type: none"> <li>• Removal of a few tall-growing trees from wetlands and wetland buffers.</li> <li>• Placement of rock and concrete footing below the 100-year flood elevation at substation site.</li> </ul>
<b>Fish &amp; Wildlife</b>	<ul style="list-style-type: none"> <li>• Substation removes 0.4 ha (1 ac) of grassland habitat.</li> <li>• Transmission line converts 6.4 ha (16 ac) of wooded habitat to low-growing shrub or grass habitat.</li> </ul>
<b>Visual Quality</b>	<ul style="list-style-type: none"> <li>• Transmission line visible to residents along SE 356<sup>th</sup> Ave., 96<sup>th</sup> Way, North Bend Way, and 106<sup>th</sup> Place/Alm Way.</li> <li>• In areas listed above, vegetative screens removed from between residents and private and public roads.</li> <li>• For 1 km (0.6 mi), transmission line partially visible to motorists on I-90, a National Scenic Byway.</li> <li>• Substation visible to users of Alm Way and NW 8<sup>th</sup> St. for short distance.</li> </ul>
<b>Socioeconomics</b>	<ul style="list-style-type: none"> <li>• Minor, short-term noise, dust, and traffic delays during 3-4 month construction period.</li> <li>• Potential for employment of 8-12 workers during construction period.</li> <li>• Estimated state sales taxes of \$26,000 based on estimated after-tax payroll and average spending by non-local workers.</li> <li>• Potential for minor short-term reduction (0–2 percent) in property values of residences near line.</li> <li>• Minor sales and property tax benefits of substation construction and operation.</li> </ul>
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>• No impacts.</li> </ul>
<b>Health &amp; Safety</b>	<ul style="list-style-type: none"> <li>• Increase in EMF of 0-3 mG, depending on location, but no increase in exposure to residents due to distance from line.</li> </ul>
<b>Noise &amp; Radio/TV Interference</b>	<ul style="list-style-type: none"> <li>• No impacts expected.</li> </ul>

### ***3.2.2 Environmental Consequences***

Where the proposed route would use existing BPA right-of-way, eight residential properties would have two BPA lines across them—the existing 500-kV line and the new 115-kV line. The new right-of-way would further restrict the owners' use of their property by preventing construction of any buildings, storing of flammable materials, or growing vegetation to heights that would interfere with the safe operation and maintenance of the line. BPA recognizes these impacts or additional burdens on private property when calculating fair market value for obtaining easements. Fair market value is intended to compensate landowners for the limitations placed on their property. No residents would be displaced by the proposed action and the impacts of restricted use are considered to be minor. (See also Section 3.9, Socioeconomics, for a discussion on property value impacts related to the presence of transmission lines near residential dwellings).

The proposed right-of-way would remove from potential development approximately 1.2 ha (3 ac) south of the Snoqualmie Ridge Business Park and north of SE 96<sup>th</sup> Street. Zoning on that parcel is "Rural Area, 5 acres" (RA-5) (see Figure 6), but there are no specific plans for its development at this time. BPA would site the transmission line on the eastern edge of this undeveloped parcel to allow the preservation of a visual buffer between the line and the residents on the east side of SE 356<sup>th</sup> Avenue (see Section 3.8, Visual Quality). Impacts would be mitigated by BPA purchasing a right-of-way across the parcel, with the value established during the appraisal process (see Section 3.9, Socioeconomics). Because of the large amount of undeveloped land in the area, removing this parcel from commercial or residential development would have a minor impact on the amount of developable land.

The existing steel transmission tower supporting BPA's 500-kV line near SE 96<sup>th</sup> Way would need to be moved approximately 15 m (50 ft) to the south so that the proposed 115-kV transmission line could pass underneath the larger transmission line. No change in land use would occur and no additional land rights would be sought.

Constructing a transmission line in the North Bend Way right-of-way east of Alm Way and in the I-90 right-of-way would add a facility to public rights-of-way where no utility line exists now. This new use would occur for only about 245 m (800 ft) on North Bend Way and for 1 km (0.6 mi) on I-90. (See also Section 3.8, Visual Quality and Section 3.5, Vegetation). Where the new line would replace Puget's existing distribution line along North Bend Way, the land use would not change, although the visual effect would be different (see Section 3.8). BPA would design the transmission line so that Puget could relocate their distribution line on BPA structures, assuming Puget obtains their own land rights for doing so. If Puget places its distribution lines on BPA's transmission structures, less right-of-way would be needed and the visual impact would be lower than having separate lines in the same right-of-way (see Section 3.8.3, Visual Quality, Cumulative Impacts). Both King County and City of North Bend development policies encourage the multiple use of transportation corridors with utilities. With mitigation, these impacts are expected to be low to moderate.

The proposed action, including the substation, would not remove the large spruce trees at the memorial shrine near the Gardiner Creek Bridge or otherwise disturb the site. The memorial shrine would not be affected by the proposed project.

Construction of the substation would place an industrial facility on a parcel of land that currently is undeveloped. Constructing a substation by a non-federal entity in the Employment Park Zone (Figure 6) within the City of North Bend requires a conditional use permit from the city. Tanner is expected to meet conditions for having a substation on that site including noise, height, and visual quality standards. The substation would not adversely affect sensitive environmental resources, such as wetlands/floodplains (see applicable sections in this EA). Tanner's conditional use permit also is conditioned on BPA obtaining environmental clearance on the proposed transmission line that would energize the substation.

Constructing an additional substation in North Bend to serve existing and future Tanner customers, and reserving a bay in the substation for Puget's future use, is consistent with the city's comprehensive plan, which has identified the need for only a single additional substation in North Bend until the year 2020.

### ***3.2.3 Cumulative Impacts***

Although they are a component of society's infrastructure needed for basic human health and safety, transmission lines and distribution lines also contribute to the alteration of the area's natural environment that has taken place since the arrival of the first settlers in the mid-1800s.

In an attempt to minimize impacts and implement "one-utility planning," BPA would design the transmission structures to accommodate Puget's distribution line and the local telephone line. Constructing a single set of poles to accommodate a transmission line, a distribution line, and a telephone line minimizes the number of utility poles needed, thus minimizing the cumulative land use impacts associated with overhead utilities in the area. Likewise, Tanner's proposed substation would be designed to fulfill needs for both Tanner and Puget, further minimizing the cumulative impacts of multiple facilities. Maximizing use of existing public rights-of-way also reduces the amount of private land converted to public uses.

### ***3.2.4 Mitigation***

- BPA would work with landowners to site wood-pole structures and to relocate the 500-kV steel structure to minimize impacts to residential properties.
- In constructing the transmission line, BPA would meet state and local safety requirements and the requirements of the **National Electric Safety Code**, including those governing ground clearances.
- BPA would pay fair market value for any easement acquired on private land. Such values would be determined during the appraisal process.

### 3.3 GEOLOGY/SOILS

#### 3.3.1 *Affected Environment*

Within the immediate project area, soils have formed in a mixture of volcanic ash and dense glacial till or in alluvium deposited on river terraces and floodplains. Overall, most soils are moderately well drained, but in many areas a cemented layer inhibits drainage at about 1 m (3 ft) below the surface. Very poorly drained soils have formed where herbaceous and woody organic materials were deposited in depressions; these soils often support wetland vegetation.

The line crosses moderately steep to steep slopes in the hills west of the Snoqualmie River Valley. Near Tanner's proposed substation site, the line would be located on the valley's nearly level floodplain. Elevations range from about 130 m (425 ft) above sea level near the substation site to about 310 m (1020 ft) in the western hills. Run-off is slow and the hazard of water erosion is slight along most of the route (USDA-SCS 1992).

#### 3.3.2 *Environmental Consequences*

Soils denuded of vegetation or disturbed by construction activities are more susceptible to erosion and mass movement. An increase in erosion can reduce soil productivity and degrade water quality. The amount of soil erosion caused by construction is a function of soil properties, slope, vegetation, rainfall patterns, and construction practices.

Impacts would be primarily related to disturbances associated with right-of-way clearing, road improvements, installation of wood-pole structures, and conductor stringing operations. Impacts would include localized increases in erosion and run-off rates at construction sites. Soils are susceptible to compaction and rutting, and unsurfaced roads may be impassable when wet. Use of heavy equipment could compact soils, reducing soil productivity. Impacts would be highest during and immediately after construction. Impact intensity would diminish as disturbed sites are stabilized and re-vegetated, consequently reducing run-off and erosion. Localized changes in run-off and erosion patterns at structure sites or on new or modified access roads are possible long-term impacts.

A portion of the project would cross an area designated by King County as an erosion hazard area (Figure 4). Development in these areas requires that a soil erosion and sediment control plan be developed prior to construction. Implementation of best management practices (BMPs) to prevent erosion and control run-off will minimize impacts posed by project construction and operation and prevent damage to downstream receiving waters. Overall, construction, operation, and maintenance impacts are expected to be low.

Landslides can be initiated where construction undercuts unstable slopes or where excessive fill is placed at the top of susceptible slopes. In addition, increases in the quantity of water that flows onto or infiltrates a susceptible slope can increase the

landslide risk. The proposed route avoids landslide hazard areas identified by King County. An engineering geologic reconnaissance of potential landslide hazard areas along the proposed alignment was completed in March 1998 (Golder Associates 1998). No active landslides were found and the project should have little permanent effect on slope stability if best management practices (BMPs) are followed (see Section 3.3.4). See Section (3.4) for a discussion of impacts to water quality.

### ***3.3.3 Cumulative Impacts***

All land development activities create the potential for erosion and sediments to leave construction sites and enter surface waters. Construction of the proposed project would add to the existing disturbed lands in the area. Minor, localized, short-term increases in erosion, runoff, and sedimentation would be expected from project construction and maintenance. Overall, with implementation of BMPs for erosion, sediment, and runoff control, these increases would have a low cumulative impact on the area's soil resources.

### ***3.3.4 Mitigation***

Minimizing disturbance and erosion is a concern at all transmission structure sites, construction staging areas, and where access roads would be modified or improved. By following BMPs that conform to the Washington Department of Ecology (WDOE) standards, impacts would be reduced or eliminated at all sites. The following BMPs would be implemented as appropriate:

- Disturbed areas would be returned to their original contour and promptly seeded with a herbaceous seed mixture suited to the site.
- Sediment barriers and other suitable erosion and run-off control devices would be installed where needed to minimize off-site movement of sediment. The erosion control devices will be left in place until the site becomes stable.
- New access roads would be properly designed with proper road drainage systems, including both surface and subsurface, to control runoff and erosion.
- When practical, construction activities would be avoided when soil is wet to reduce soil compaction, rutting, and the resultant loss in soil productivity. See Section 3.4, Water Quality, for related impacts and mitigation.
- Grading and other disturbance of the natural vegetative cover would be minimized.
- Where practical, construction would be limited to the dry season in steep areas, and permanent erosion protection and re-vegetation of disturbed slopes and surface water control measures will be established immediately following construction.

## 3.4 WATER QUALITY

### *3.4.1 Affected Environment*

Located on the west side of the Cascades, the climate of the project area is subject to a heavy marine influence from the Pacific Ocean. Summers are relatively warm, but hot days are rare; winters are cool, but freezing temperatures and snow are infrequent at lower elevations. The average annual precipitation at Snoqualmie Falls is about 150 centimeters (60 inches), most of which falls between October and April (USDA-SCS, 1973). Several small tributaries of the Snoqualmie and South Fork Snoqualmie rivers would be crossed by the project, including D Creek, Coal Creek, Kimball Creek, and the intermittent stream, Gardiner Creek.

Section 303(d) of the Federal Clean Water Act requires each state to develop a list of water bodies that do not meet established water quality standards. In Washington, WDOE develops the standards that protect beneficial uses such as drinking water, fisheries, and recreation. Parameters that WDOE typically monitors include bacteria, pH, dissolved oxygen, temperature, total dissolved gas, certain toxic and carcinogenic compounds, habitat and flow modification, and aquatic weeds or algae that affect aquatic life. None of the streams crossed by the project are on the 303(d) list. However, these streams are tributaries to the Snoqualmie or South Fork Snoqualmie rivers, which are 303(d)-listed for exceeding water temperature criteria.

No sole source aquifers designated or proposed by the U.S. Environmental Protection Agency exist in the area (US-EPA 1996), however, a number of domestic water wells and one municipal water well are located within the project area.

### *3.4.2 Environmental Consequences*

Impacts would be associated primarily with ground disturbance from right-of-way clearing, access road construction and improvements, installation of wood poles, and stringing operations. Vegetation removal and soil disturbance increases erosion, run-off, and the risk of sediment reaching surface waters. Access roads are susceptible to rutting when wet, which can result in run-off and sediment being channeled into streams. The likelihood and intensity of surface water impacts depend on the amount of disturbance, slope, vegetation cover, soil characteristics, season, and susceptibility of disturbed areas to erosion. Sediment affects water clarity, plant and fish habitat, and water temperature and chemistry.

Overall impacts from the project would be low and limited to localized increases in erosion and run-off. The intensity of impacts would diminish after the site is restored and erosion and run-off control measures take effect. Impacts associated with line construction and maintenance will be minimized because a corridor and access road system already exists along much of the proposed route.

Construction activities would not exacerbate the 303(d) criteria that currently are exceeded in the Snoqualmie and South Fork Snoqualmie rivers because the small amount of clearing required near tributary streams is not likely to increase their temperature significantly or to result in temperature increases downstream.

The project is located within the boundaries of the East King County Groundwater Management Area (King County DNR, 1998). Activities associated with the installation of wood poles would not directly or indirectly introduce contaminants into the aquifers. The project would not degrade the quality of aquifers or jeopardize their use as a drinking water source. In addition, the project would not affect the chemical or biological characteristics of surface or ground waters in the area. It is unlikely that herbicides would be used during project construction, although they might be used selectively on cut stumps of deciduous trees to prevent re-sprouting. BPA commonly uses herbicides during maintenance activities. (See BPA's Transmission System "Vegetation Management Program Final Environmental Impact Statement," DOE EIS-0285, May 2000.) Prior to using any herbicides, however, BPA would contact affected landowners to find out if they have concerns with the use of herbicides on or near their property. BPA's policy on herbicide use in the vicinity of domestic/public drinking water wells is to maintain a 50-m (164-ft) buffer for any herbicide having a ground/surface water advisory, or a 15-m (50-ft) buffer for any other herbicide. Any herbicide used in construction, operation, or maintenance of the proposed project, including the substation, would be EPA-approved and would be applied according to label instructions.

### ***3.4.3 Cumulative Impacts***

Current and future land use development in the watershed might increase peak flows and introduce sediment into streams, depending on site-specific conditions. Only temporary increases of sediment in streams are expected from construction of the proposed transmission line, access roads, and substation. Mitigation measures proposed for this project would reduce the chance of large amounts of sediment entering streams. It is unlikely, therefore, that the proposed action, when added to past actions, current proposals, and future developments, would measurably contribute to degradation of the area's water quality.

### ***3.4.4 Mitigation***

Because of the interrelationship between soil erosion and surface water quality, successful implementation of run-off and erosion controls is important in protecting water quality (see Section 3.3, Geology/Soils). Standard mitigation would implement the measures best suited to each individual location to eliminate or reduce erosion and run-off and stabilize disturbed areas. A number of measures, including but not limited to the following, would be used alone or in combination:

- Best Management Practices (BMPs) to control erosion and run-off would be employed to eliminate or minimize water quality impacts.

- Sediment barriers such as straw bales or silt fences would be used where needed, including at the substation site, to prevent off-site movement of sediment. Devices would be left in place until the site becomes stable.
- Disturbed areas would be seeded immediately following construction with a seed mixture suited to the site. Areas include sites disturbed by installation of transmission poles and where construction activities have affected vegetation adjacent to streams or wetlands.
- Traffic across wet soils susceptible to rutting would be limited.
- Streams would be crossed only at existing crossings; no fords would be constructed.
- If it is necessary to improve or add stream crossings, culverts or other structures would be designed and installed to provide unobstructed stream flow and minimal change to the stream course.
- If practical, construction activities would be timed to reduce erosion by conducting operations during low-runoff periods.
- Roads that must be used during wet periods would have a stable surface and sufficient drainage to allow such use with a minimum impact. Gravel may be necessary to protect some road surfaces and reduce the potential for erosion.
- Any gravel used for access road improvements near water bodies or wetlands would be clean.
- Any stream bank damage would be repaired and the site stabilized immediately.
- No solid materials, including building materials, would be discharged into surface waters.

## 3.5 VEGETATION

### 3.5.1 Affected Environment

The vegetation in the Northwest has been characterized on the basis of physiographic provinces and vegetation zones. According to this system of classification, the project area is located within the Puget Trough Physiographic Province and the *Tsuga heterophylla* (western hemlock) Vegetation Zone (Franklin and Dyrness 1969).

The *Tsuga heterophylla* zone (based on the potential climax species) is considered the most extensive vegetation zone in western Washington and Oregon (Franklin and Dyrness 1969). Most common tree species found in this zone are coniferous species: Douglas fir, western red cedar, and western hemlock, the latter being the major climax species. Hardwoods are not common except on recently disturbed sites or in specialized habitats such as in riparian zones, and they are almost always subordinate to the coniferous species. The vast majority of the zone in the project area has either been logged or burned during the last 150 years.

The understory in the *Tsuga heterophylla* zone depends on local moisture regimes, but in the project area most typically is composed of Oregon grape, salal, swordfern, and other herbaceous species. Other shrubs commonly found in the understory are vine maple, fireweed, common thistle, and bracken fern. No federally listed threatened or endangered plants fall within any of the four townships within which the project is located (WDNR 1999).

Noxious weeds are undesirable plant species that pose a major threat to agriculture and/or native plant communities. Noxious weeds likely to be found in the North Bend/Snoqualmie area are spotted knapweed, yellow and dalmation toadflax, yellow and orange hawkweed, tansy ragwort, rush skeleton weed, St. Johns ragwort, Scots broom, and sulfur cinquefoil (Jane Wentworth, Program Manager, Noxious Weed Control Program, King County Department of Natural Resources, telephone and written communication, January 18, 2000).

During project review, evidence of a fungus that attacks the roots of conifers was observed on trees within the right-of-way of I-90. Although a number of these trees are still standing, some do not appear to be alive.

### ***3.5.2 Environmental Consequences***

Construction, operation, and maintenance of transmission facilities can directly affect vegetation resources. Short-term impacts can occur during project construction and usually have minimal lasting impacts on vegetation. Other impacts are long term, such as ongoing maintenance practices that can permanently alter plant species composition and plant communities. Tall growing vegetation would be removed for right-of-way clearing, to eliminate danger trees, and to construct access roads. Ground disturbance from construction and stringing operations can remove or damage existing vegetation, cause invasion and spread of undesirable plant communities, adversely impact sensitive or protected plants (if present), or create erosion on steep slopes. Vegetation management activities also can alter and influence the types of plants that grow in the right-of-way.

A portion of the proposed route has already been cleared, i.e., along BPA's right-of-way and along North Bend Way, although additional clearing would be required to construct, operate, and maintain the line safely and reliably. Right-of-way clearing would remove approximately 6.4 ha (16 ac) of vegetation consisting of both conifers (Douglas fir, western red cedar, and hemlock) and deciduous trees (largely alder, cottonwood, and maple). Development of access roads would remove some additional tall growing vegetation, but mostly the access roads would be within the right-of-way. (See also Section 3.8, Visual Quality.)

Noxious weeds can spread quickly along the length of a transmission line right-of-way, and this is especially true for new rights-of-way or new construction on existing rights-of-way, where weeds have not been a problem previously. BPA would survey for the presence of noxious weeds before construction activities begin. If weeds are found along the project route, care would be taken to prevent their proliferation. With mitigation (see Section 3.5.4), this impact is expected to be minor.

Some of the trees that would be removed from the I-90 right-of-way have been afflicted with a fungus, and some are no longer alive. These trees would be removed carefully, to prevent the spread of the fungus to other trees nearby (see Section 3.5.4). With mitigation, this impact would be low.

### ***3.5.3 Cumulative Impacts***

The proposed action would increase the width of BPA's existing cleared right-of-way in the area to be paralleled by the new line from 50 to 57.5 m (150 ft to 172.5 ft) and would clear new areas along the remainder of the proposed line. If another north-south line were needed in the area in the future, it could be sited within the existing BPA Echo Lake-Monroe right-of-way (in a **double-circuit** configuration), adjacent to it (on a parallel right-of-way), or further away from the corridor. Expanding the right-of-way and adding a transmission line could further impact the vegetation in the area during line construction and maintenance. Plants would be removed from the plant community and noxious weeds could invade the area. However, compared to the impacts of the continued urbanization of this area, the contribution of the proposal to the continuing and cumulative reduction in the amount of vegetation is expected to be low.

### ***3.5.4 Mitigation***

To minimize the likelihood of impacts, the following mitigation measures will be implemented:

- Clearing would be minimized throughout the project.
- At structure sites, vehicles would not be allowed off roads.
- BPA would undertake a noxious weed survey before construction activities begin. Where noxious weed have been identified, all construction vehicles would be washed before entering and after leaving project sites. Following the completion of construction activities, follow-up surveys will be made, as necessary.
- Immediately after construction, disturbed areas would be re-vegetated with low growing vegetation to guard against the proliferation of noxious weeds and the potential for erosion, and to preserve visual quality.
- To reduce the chance of spreading the fungus disease to non-infected trees within the I-90 right-of-way, BPA would clear the trees and construct access roads during the dry season (April through mid-October).

## 3.6 WETLANDS AND FLOODPLAINS

### *3.6.1 Affected Environment*

Wetland ecosystems depend on constant or recurrent shallow flooding or saturation at or near the soil surface. Wetlands can be biologically highly productive and are protected by the Clean Water Act. Wetland benefits include improved water quality, flood control, and wildlife habitat, in addition to recreational and aesthetic outlets.

Within the project area, wetlands have developed on floodplains and terraces, along streams, and in the vicinity of hillside seeps. These wetlands are flooded for variable periods during the growing season. **Palustrine forested, palustrine scrub-shrub, and palustrine emergent** wetlands occur along the proposed right-of-way. The largest wetland is associated with Kimball Creek along North Bend Way (Figure 8).

Common tree species within forested wetland areas include red alder, black cottonwood, western red cedar, and Sitka spruce. Shrub species include Pacific willow, Sitka willow, stink current, red rosier dogwood, rose, prickly current, salmonberry and devil's club (Beak Consultants 1997).

### *3.6.2 Environmental Consequences*

Wetlands could be affected if construction activities alter wetland vegetation, soils, or hydrology. Construction, clearing activities, and any necessary road improvements could potentially affect sediment transport, damage vegetation and wildlife habitat, and reduce a wetland's ability to provide for flood and sediment control.

In accordance with U.S. DOE regulations on compliance with Floodplain/Wetlands Environmental Review Requirements (10 Code of Federal Regulations (CFR) 1022.12), BPA has prepared the following assessment of the project's impacts on floodplains and wetlands. A Floodplain/Wetland Notice of Involvement was published in the Federal Register on February 24, 2000.

The proposed route would cross a number of small wetlands. Until project design is finalized, the exact locations of transmission structures are not known. However, most wetlands crossed are narrow and will be spanned where practical. Impacts would be related primarily to removal of tall trees from wetlands and associated buffers. In addition, a few poles would likely be sited in wetland buffers, which range from 8 to 30 m (25 to 100 ft) depending on the jurisdiction involved, and would result in short-term localized disturbance at structure bases.

The proposed alignment bisects the large palustrine scrub-shrub and forested wetland associated with Kimball Creek for about 0.8 km (0.5 mi). However, the line would be located on existing fill within the North Bend Way right-of-way and no structures would be placed in the wetland. Impact would be limited to removal of a few tall trees from the

wetland to maintain line safety and reliability. Because existing access is in place, no new roads would be constructed in the wetland.

Under Executive Order 11988, Federal agencies must avoid or minimize adverse impacts associated with short-term or long-term modification and occupancy of floodplains. Modification and destabilization of the floodplain could have potentially adverse effects not only near the disturbance, but also in the stream channel and floodplain great distances downstream. Adverse impacts include the potential for flood damage to the facilities, increased flooding due to displacement of water from the normal floodplain by construction of the facilities, and increased potential for erosion of floodplain soil and sediment near construction sites.

The proposed route crosses the 100-year floodplain adjacent to Kimball Creek where it would be located on existing fill. Except near the creek, the line would be at an elevation higher than the flood elevation (FEMA, 1989). Any structures placed within the 100-year floodplain would be designed to withstand flooding, not impede expected flows, and prevent accumulation of flood debris. The project would not increase the chance of flooding or flood-related damage.

Substation construction would remove relatively porous soil below the 100-year flood elevation and replace it with less porous concrete footings and gravel. Tanner Electric is required to compensate for the resulting loss of water storage capacity on a one-for-one basis. To satisfy this requirement, Tanner will remove soil over an area approximately 46 m (150 ft) by 44 m (145 ft) by 26 cm (13 in) deep. The amount of material removed by the excavation (667 cubic meters [873 cubic yards]) would make up for the storage capacity lost by substation construction. The excavated soil will be placed outside of the floodplain to avoid additional impacts.

Increases in run-off and stream flows due to project clearing and access road construction are expected to be minor. Overall, the proposed project would not adversely affect human life, property, or natural floodplain values.

### ***3.6.3 Cumulative Impacts***

Past actions have encroached on wetland areas, reducing their size and number in the Upper Snoqualmie Valley. This has contributed to increases in runoff and stream flows. Throughout the U.S., the historic loss of wetlands and problems caused by construction in 100-year floodplains have been well documented. Any impacts to wetlands would add to the cumulative loss of these resources, and construction within 100-year floodplains could affect the base flood elevations if not mitigated. However, with implementation of effective mitigation as described below, the project would not contribute to the cumulative loss of these important resources.

### ***3.6.4 Mitigation***

To eliminate or reduce impacts to wetlands and to the floodplain of Gardiner Creek, the following actions would be taken:

- Transmission poles would be placed to avoid impacts to wetlands and floodplains. Wetlands would be spanned where practical.
- Best management practices (BMPs) would be employed to control erosion and run-off and to avoid adversely affecting wetlands and associated aquatic resources.
- Manual methods would be employed to remove trees or vegetation determined to be a hazard to transmission line safety and reliability. Vegetation would not be bladed.
- Gravel would not be placed within wetlands unless necessary to access a work site.
- Existing roads would be used where possible to provide access through the wetland.
- Excavated material would not be disposed of within wetlands or wetland buffer areas.
- At the substation site, any soil removed for construction of the facility would be deposited in uplands.
- Access roads would be located to avoid wetlands where practical. If access is required through wetlands, roads would be located to minimize impacts and constructed in compliance with all applicable permits.

### **3.7 FISH AND WILDLIFE**

#### ***3.7.1 Affected Environment***

Although the entire project area has been logged in the past, much of the area supports a relatively undisturbed, mature forest canopy (Beak Consultants 1997). The proposed project crosses several different types of habitat including both upland and wetland environments. Upland habitat includes mixed stands of second- and third-growth conifers such as Douglas fir, western red cedar, and western hemlock (the climax species in the area) mixed with deciduous trees such as alder, maple and black cottonwood. Understories contain salmonberry, Oregon grape, blackberry, salal, swordfern, and other herbaceous species. Wetland habitats, including forested, scrub-shrub, and open-water wetlands, exist throughout the project area. The largest of these is associated with Kimball Creek along North Bend Way (see Section 3.6). Additional habitats in the area include those associated with rural-residential areas and open grasslands, such as that found in North Bend where Tanner would build the substation.

In general, the wetland associated with Kimball Creek and surrounding upland habitats throughout the project vicinity support a large number of snags, a good diversity of native plants, and a high level of vegetative structure. Although all of these habitats are important for the species they support, none found in the area are considered rare or unique, and all are common throughout northwest Washington at these elevations.

Three small perennial streams, D Creek, Coal Creek, and Kimball Creek, and one ephemeral stream, Gardiner Creek, are located in the immediate project area. D Creek is a tributary to Coal Creek and Coal Creek is a tributary to Kimball Creek. According to the Washington Streamnet Database (WDFW 1999a), sculpin and resident coastal

cutthroat trout are found in Coal Creek and Kimball Creek; however no fish are known to be in the upper Coal Creek tributaries such as D Creek. In nearby rivers outside the immediate project area, including the South Fork Snoqualmie and Snoqualmie rivers, other fish species include rainbow trout and Montana whitefish.

Many species of mammals and birds are found in the project area, including deer (*Odocoileus*), coyote (*Canis latrans*), and possibly black bear (*Ursus americanus*). It has also been reported that cougars (*Felis concolor*) have recently been seen in the project area. Birds include waterfowl and raptors such as red-tailed hawks (*Buteo jamaicensis*), and other large and small birds including pileated woodpeckers (*Dryocopus pileatus*), crows (*Corvus brachyrhynchos*), Steller's jays (*Cyanocitta stelleri*), juncos (*Junco hyemalis*), and black-capped chickadees (*Parus atricapillus*). Reptiles most commonly encountered in the project area are northwestern garter snakes (*Thamnophis spp.*).

Sensitive species in the area listed by either federal or state governments include peregrine falcon, osprey, gray wolf, fisher, and northern spotted owl. None, however, are found within 3 km (2 mi) of the project area (WDFW 1999b). The closest critical habitat of the northern spotted owl is found a minimum of 13 km (8 mi) away (USFWS 1999 data). No federally listed or state-listed fish species are found in the local area (WDFW 1999a). (Also see Section 4.2.)

### **3.7.2 Environmental Consequences**

The proposed action would alter some habitats by removing tall growing vegetation and encouraging the growth of low growing plant communities. Removing vegetation such as snags could deplete wildlife habitat upon which some species such as the pileated woodpecker depend. Removing the vegetation from wetlands and wetland buffers could harm wildlife habitats and the species that depend on them. Where possible, snags and felled trees will be left in place (see Section 3.7.4).

The proposed transmission line would cross several streams. Construction activity could allow sediments to reach surface waters. With mitigation, the proposed action would not affect water quality (see Section 3.4, Water Quality). With no changes to water quality, adverse impacts to fish, either in the project area or downstream, are not anticipated.

Some of the habitat within the right-of-way would change from wooded to shrub or grass. However, because the converted land would be such a narrow strip (15 m [50 ft] wide or less), most wildlife occupying the area would be displaced only temporarily or would use adjacent forested areas.

The proposed substation would eliminate approximately 0.4 ha (one acre) of grasslands (see Section 3.6.2). Because of the relative abundance of this kind of wildlife habitat in the area, and the lack of listed species or their critical habitat, this impact would be minor.

### **3.7.3 Cumulative Impacts**

The proposal would remove approximately 0.4 ha (1 ac) of wildlife habitat in the area and would convert approximately 6.4 ha (16 acres) of wooded habitat to low-growing shrub or

grass habitat. These actions, together with other past, present and future actions in the area, such as developing Snoqualmie Ridge in the City of Snoqualmie and building the Mt. Si Substation, could adversely affect fish and wildlife by altering or reducing the amount of habitat available to them. However, the amount of habitat removed or converted by the project would be too small to noticeably contribute to local reductions of fish and wildlife populations.

#### **3.7.4 Mitigation**

- To prevent sediments from reaching surface waters and affecting fish, work within the vicinity of all streams would be undertaken during periods of low flow, and any work within wetlands or wetland buffer areas will be done during the dry season (April through mid-October).
- Tall growing vegetation that must be felled in wetlands would be left in place as wildlife habitat.
- Snags would be left for wildlife habitat if it is determined that they would not interfere with the safe construction and operation of the line.
- BPA and Tanner would provide the appropriate erosion control devices (see Section 3.4.4, Water Quality) to protect sediments from entering any of the wetlands or any of the waterways crossed by the proposed project. The erosion control devices would be left in place until the site becomes stable.

### **3.8 VISUAL QUALITY**

Visual impacts of transmission lines are directly related to the visibility from critical view points of support structures such as steel towers or wood poles, access roads, the cleared right-of-way, conductors, insulators, and other components. Factors include the prominence of those views, duration of view, and sensitivity of the viewer. Impacts would be direct and last over the life of the transmission line.

The visibility of an object is the ability to visually differentiate that object from its setting. Two major parameters contribute to the visibility of an object: its apparent size and its apparent contrast between the object and its surroundings. Apparent size is related to viewer distance, and in viewing transmission structures, height is its most outstanding characteristic, along with the amount of right-of-way clearing, particularly through forested areas. Apparent contrast is the amount of reflected light between an object and its surroundings. In the case of transmission structures, in certain conditions, shiny conductors or steel towers may reflect a lot of light compared to their surroundings.

Another component of visual impact is the duration of view. Views of transmission facilities from residential dwellings/commercial buildings would be long term, while views from vehicle operators on roadways would be relatively brief, depending on whether the line parallels the road, on relative speed in relation to the object being viewed, and on other objects in one's view.

### ***3.8.1 Affected Environment***

The landscape setting in the project area is a combination of valley floor and hillside. The existing views are a mix of rural-residential land, undeveloped land, developing residential-commercial land, wetlands, grasslands, and rugged mountainous areas. The majority landscape characteristic is a closed forest, primarily conifers (Douglas fir, hemlock, and cedar), and to a lesser extent, deciduous trees such as maple, alder, and cottonwood. Overall, the visual quality of the area is high primarily due to the lush vegetation that exists there.

In the project area, there are two major arterial roadways (North Bend Way and I-90), one local access street (called Alm Way in the City of North Bend and 106<sup>th</sup> Place in unincorporated King County), and two private roads (SE 356<sup>th</sup> Avenue and SE 96<sup>th</sup> Way). I-90 carries commuters, truckers, and recreationists to and from the Puget Sound area, and is designated a National Scenic Byway in the project area by the Washington State Department of Transportation (WSDOT). Average daily traffic (ADT) on I-90 likely exceeds 50,000 vehicles per day, based on the most recent traffic counts from WSDOT (WSDOT 1998). North Bend Way serves as a major thoroughfare between North Bend and Snoqualmie as well access to and from I-90. ADT on North Bend Way is approximately 7,300 vehicles per day (King County Department of Transportation). Alm Way/106<sup>th</sup> Place primarily serves the residents of that street. Private roads provide access to residences and some businesses in the area.

The Snoqualmie Valley Railroad, a privately owned historic railroad operated by the Northwest Railway Museum in Snoqualmie, runs weekend excursion trips between North Bend and Snoqualmie Falls from early April through September. Approximately 27,000 people rode the train in 1999 (Richard Anderson, Northwest Railway Museum, e-mail February 3, 2000). The visual quality of the area as seen from the passenger cars is critical to its successful operation and continued existence.

While viewer sensitivities of motorists on I-90 vary from low to high (truckers and commuters [normally low] to recreationists [normally high]), viewer sensitivities of the Snoqualmie Valley Railroad passengers are assumed to be high.

Puget's existing electrical distribution line follows a portion of North Bend Way and Alm Way/106<sup>th</sup> Place, and a telephone line follows the same alignment as Puget's system on North Bend Way. The telephone line also continues into the right-of-way of I-90.

### ***3.8.2 Environmental Consequences***

Residents and travelers in the area, including recreationists, could be affected by the visual effect of the proposed line and substation. BPA has prepared six sets of photo simulations (six pairs of photos) showing how the new transmission line would appear along SE 356<sup>th</sup> Avenue, within the I-90 right-of-way, and along North Bend Way. The first photo in each pair shows the existing setting; the second photo simulates the transmission line in that setting. (Figure 2 shows where the photos were taken).

The proposed project would reflect light from the metal components of the project, primarily the conductors. Because the support structures would be made of natural materials (wood), their contrast (reflectively) would be low. With mitigation (see Section 3.8.4), the reflectivity of the conductors would also be low. For many viewers, much of the visual impact of the transmission line would be related to right-of-way and danger tree clearing.

The entire right-of-way is not visible from a single viewpoint. Instead, the transmission line would be visible from a number of areas, including some of the residences along SE 356<sup>th</sup> Avenue, 96th Way, North Bend Way, and 106<sup>th</sup> Place/Alm Way. The transmission line would also be visible to motorists using I-90 and the other roads the line parallels, and to people travelling on the Snoqualmie Valley Railroad. In some cases, the visual impact would come from seeing a transmission line where none existed before (I-90, North Bend Way, 96th Way, 106<sup>th</sup> Place/Alm Way, and the Snoqualmie Valley Railroad). It should be emphasized, however, that Puget has an existing electrical distribution line along half of the proposed route. The proposed transmission line would replace the major portion of this distribution line.

The proposed Tanner Substation in North Bend, on what now is an undeveloped parcel, could also cause visual impacts. The substation would be within a fenced area of approximately 0.2 ha (0.45 acres), and would be visible from Alm Way and NW 8<sup>th</sup> Street south of the proposed site.

**Impacts to residents and visitors.** The visual impacts to residents near the northern portion of SE 356<sup>th</sup> Avenue would result primarily from right-of-way clearing and the removal of a limited number of danger trees in the 15-m (50-ft) vegetative buffer that screens the Snoqualmie Ridge Business Park (illustrated on Figures 1 and 5) from the residents' views. Clearing for the right-of-way and danger trees, including the danger trees within the 50-foot vegetative buffer, would likely remove some of the vegetation that screens the business park from the affected landowners in this area. Photo Pairs 1 and 2 show this area with and without the proposed wood pole line. Depending on the sensitivity of the viewers on the northern half of SE 356<sup>th</sup> Avenue across from the business park, the visual impact in this area would range from moderate to high, and the impacts to those on the southern half of SE 356<sup>th</sup> would likely range from low to moderate.

The proposed transmission line would create a low to moderate impact to the residents of 96<sup>th</sup> Way, depending on how prominent the transmission line would be in their view. Visual impacts to the residents would be related primarily to the amount of right-of-way clearing. The clearing also would remove about 450 m (1500 ft) of the closed canopy of vegetation over the road before the transmission line enters the I-90 right-of-way. Clearing could also increase the exposure of portions of the westbound lanes of I-90 to one household near the highway. Exposing freeway traffic may also increase the amount of noise perceived by residents adjacent to the highway. See Section 3.12.3 and Appendix B.

On the north side of North Bend Way, between I-90 and SE 384<sup>th</sup> Avenue, a 7.6-m (25-ft) wide strip, plus danger trees, would be cleared. The vegetation in this area acts as a visual buffer between the road and the adjacent residences. Although the line would be

sited within the county road right-of-way, a few danger trees may need to be removed from private property as well as from the county right-of-way. Clearing in front of some residences along North Bend Way would remove the tall growing vegetation, including some large Douglas firs, and views of the transmission line and the road would replace views of the trees for some residents. Depending on the individual residents' sensitivities and their perspective relative to the elevation of the roadway, these impacts would range from moderate to high. (See Photo Pair 3.) With mitigation (see Section 3.8.4), impacts to the overall visual quality of the area would be reduced to a low level, although some individual residents may experience the impact as high.

Additional clearing would be done along North Bend Way between Meadowbrook Way and Alm Way, although the amount of clearing would be relatively minor. The visual impacts to residents and motorists in this area would be low to moderate, depending on their sensitivities and their perspective relative to the elevation of the road. (See Photo Pair 4.)

Additional vegetation would be removed east of Alm Way/106th Place between the Snoqualmie Valley Railroad and North Bend Way for approximately 230 m (750 ft). This clearing would remove most of the vegetative buffer between the railroad tracks and North Bend Way, but the vegetation that screens the residences on Alm Way from the railroad would remain. The views of Mt. Si from the railroad at this location would be unaffected by the transmission line and related clearing. With mitigation (see Section 3.8.4), impacts to the railroad would be low. Impacts to the residents on Alm Way/106<sup>th</sup> Place would also be low.

**Impacts to Motorists.** WSDOT has adopted four classifications of highways within the state: Class A, Superior Scenic Qualities; Class B, High Scenic Value; Class C, Secondary Scenic Importance; and Class D, Industrial, Heavily Urbanized or Deteriorated Area. Two subclasses also exist for Classes A and B, commonly known as AX and BX. These are alternatives for Classes A and B where aerial facilities such as transmission lines could be allowed, depending on design factors such as configuration, color, and location, if they do not affect landscape quality. WSDOT has designated the I-90 corridor from Mile Post 17 to Mile Post 34 as BX. BPA proposes to place approximately 1 km (0.6 mi) of the transmission line in Mile 26 within the I-90 right-of-way, which is also within the purview of the Greenway Trust.

The proposed transmission line would create low to moderate impacts to those travelling on I-90, depending on viewer sensitivities. The line would not become the dominant view to either eastbound or westbound motorists: the dominant views to eastbound motorists would be Mt. Si; the dominant view to westbound motorists would be the foothills of the Cascades (see Photo Pairs [5](#) and [6](#)). The following factors also would limit visual impacts to I-90 motorists:

- the line's relatively small size (115-kV);
- the line's limited length within the highway right-of-way (1 km [0.6 mi]);
- the use of natural materials (wood poles), in a single-pole design;
- the relative speed of viewers (60-70 miles per hour);

- the curvilinear shape of the freeway in this area; and
- the vegetative buffer between the line and the highway.

**Impacts of the substation.** Removing the vegetation along a portion of Alm Way east of the residences would expose the proposed substation to view by users of Alm Way and NW 8<sup>th</sup> Street, but not from North Bend Way. The proposed substation would be screened from public view from North Bend Way due to the existing vegetation between Alm Way and North Bend Way. No residences would be affected. The proposed substation would be relatively small (less than a half acre in size), have components no taller than 5.5 m (18 ft), except for a single **dead-end tower**, which would be approximately 11 m (35 ft) tall. The substation would be fenced, would have a berm on the northeast and southeast sides, and would be landscaped. With mitigation, the visual effects of the proposed substation on the visual quality of the area would be low.

### *3.8.3 Cumulative Impacts*

The proposed action would add a utility line in areas where overhead utilities already exist as well as in new locations. Combining utilities on one set of poles, however, helps to offset the cumulative visual impacts associated with overhead lines in the area. Constructing a single substation in the North Bend to serve the needs of two utilities (Tanner and Puget) would also reduce the cumulative visual impacts of providing this service.

Nevertheless, constructing a new utility line in the area would add to the visual intrusion already placed on the natural environment by existing development. The cumulative visual impacts of the proposed action when added to the visual impacts of past, present, and future developments in the area, would add to the intrusion on the visual quality of the area.

Because government authorities likely would require visual mitigation for present and future development projects, such as the City of North Bend's landscaping requirement for the proposed substation, it is not expected that the proposed action, when added to other past, present, and reasonably foreseeable future actions, would create high cumulative impacts on the visual quality of the area. By combining the facilities needed by several entities, the proposed project reduces the cumulative effects of each entity serving its needs with its own facilities.

### *3.8.4 Mitigation*

- BPA would work with the City of Snoqualmie and the Snoqualmie Ridge Business Park when adding additional vegetation to the west side of the 50-foot vegetative buffer on Quadrant property that was set aside to screen the business park from public view.

- Vegetation would be planted along North Bend Way to partially screen those properties where the majority of the tall growing vegetation would be removed between residences and the county road, and where the visual impacts are high.
- At their request, BPA would work with the landowners along North Bend Way to site the proposed wood pole structures so that the transmission line is least disruptive to their views.
- A plant specialist would assist with identifying the appropriate plant species to reduce the visual impacts to the residents, Snoqualmie Valley Railroad passengers, and I-90 travelers resulting from removal of tall growing vegetation. BPA would consult with the Greenway Trust before undertaking any plantings within the I-90 right-of-way.
- Existing roads would be used for access, where possible.
- All disturbed areas, including any access roads constructed in the I-90 right-of-way, would be re-seeded following construction activities.
- At the request of representatives of WSDOT, within the I-90 right-of-way no trees would be topped.
- Darkened wood poles would be used to reduce their visibility.
- Non-reflective conductors would be used to reduce their shininess in certain light conditions.
- Any trees removed from the state right-of-way would be disposed of according to the requirements of the state and the Greenway Trust.
- Any trees that would be removed from the county right-of-way would be offered to the adjacent landowners at no expense.

## 3.9 SOCIOECONOMICS

### *3.9.1 Affected Environment*

**Background.** The socioeconomic environment of the Snoqualmie/North Bend area has been influenced primarily by its proximity to the large urbanized centers in the Puget Sound area, the rugged beauty of the northern Cascades, and the excellent transportation network that provides access to the region. The area is served by I-90 to the northeast and southeast and State Route 18 (SR-18) to the south, which connects to Interstate 5. Current traffic volume on I-90 in the project vicinity exceeds 50,000 vehicles per day, based on the most current estimates published by the Washington State Department of Transportation in 1998. The 1997 traffic projection for Mile Post 26, just east of SR 18, was estimated at 49,000 vehicles per day during that year (WSDOT 1997). Although no recent traffic counts have been taken on North Bend Way within unincorporated King County, 1999 projected daily traffic for the county road west of SE Meadowbrook Way was 9200 vehicles, and 4900 vehicles for the county road east of SE Meadowbrook Way

(Johnnie Walker, Senior Engineer, Historic Traffic Counts 1989-1999, King County Department of Transportation, telephone communication, February 18, 2000).

**Population.** Both Snoqualmie and North Bend are relatively small rural communities in central King County. The City of North Bend's 1999 population (as of April 1999) was approximately 3800 and the City of Snoqualmie's population was approximately 2000 (State of Washington, Office of Financial Management 1999).

**Economy.** Until about the mid-1900s, the local economy was resource-based, i.e., logging, mining, and to some degree agriculture. Over the years, it evolved to a service-based economy—primarily retail, but also finance, insurance, real estate, and ancillary services. Many who live and work in the area depend on the economic health of the large urban centers in the Puget Sound region. Many people reside in the local area but travel to the Seattle, Tacoma, or Renton areas to work.

**Ethnicity.** The 1990 Census identified the ethnicity of North Bend and Snoqualmie to be predominantly Caucasian, i.e., 97.1 percent and 94.5 percent respectively; and the remainder to be primarily Asian, African-American and American Indian (USDC 1990).

**Per Capita Income.** The per capita income for King County residents in 1990 (based on 1990 Census, Summary Tape File 3A, the most recent information available) was \$18,587. This level of income was higher than the state as a whole and also higher than both Snoqualmie and North Bend residents during that year (North Bend's per capita income was \$13,770 while Snoqualmie's was \$12,065). Snoqualmie's relatively low per capita income level resulted in a greater percentage of the city's income earners falling below the poverty level (13.3 percent) than income earners countywide (10.9 percent). Less than 7 percent of the income earners in the North Bend had incomes below the poverty level during this same year (USDC 1990b). Although the 1990 Census showed per capita income levels in the local area as low relative to the state and county, both Snoqualmie and North Bend likely will show a marked increases in relative income levels in the 2000 Census. This increase is expected as a result of the substantial growth of middle-income earners moving into the area during the 1990s (Chandler Felt, Demographer, King County Office of Regional Policy and Planning, telephone communication, April 21, 2000).

**Property Taxes.** Property taxes help support the activities of local taxing districts such as local government and public schools. Most private property is subject to local property taxes unless in a tax-exempt status. Entities commonly exempt from local property taxes are local, state, and federal government entities (such as BPA). Local public utility districts (such as Tanner Electric) normally are not exempt (Steven Yergeau, Manager, Utilities and Right-of-way Section, Washington State Department of Revenue, telephone communication, March 11, 2000).

When BPA acquires easements across private property, the land remains under control of the property owner, and the landowner continues to pay property taxes on the entire parcel, including that within any right-of-way purchased by BPA. Because use of the land within BPA's easements contains restrictions, assessed values are often adjusted downward by the local taxing authorities if it can be shown that the use of a parcel has been adversely affected. As a property's value is adjusted downward, so too are the taxes paid on an individual property.

**Sales Taxes.** Washington State sales taxes are currently assessed on the value of goods and services sold within the state. The sales tax rate in the North Bend/Snoqualmie area is currently 8.2 percent (Beth Brown, Tax Information Specialist, Washington State Department of Revenue, telephone conversation, December 29, 1999). Of this amount, 6.5 percent of the sales tax goes to the state and 1.7 percent to the local entity (King County Assessor's Office).

**Property Values.** When BPA acquires rights-of-way, landowners are offered fair market value for the land. Fair market value is determined through the appraisal process, which accounts for all factors affecting value, including the impact the transmission line may have on the remaining portion of the property. Each property is appraised individually using neighborhood-specific data to determine fair market value. BPA pays only for the rights to use the right-of-way it acquires and for impacts to the property through which the right-of-way passes; it cannot pay for impacts, such as visual impacts, to owners of property adjacent to the property occupied by its facilities.

### ***3.9.2 Environmental Consequences***

**Short-term Construction Impacts.** Short-term socioeconomic impacts of the project include a temporary increase in economic activity from workers in the area, temporary traffic disruptions, and increases in the amount of noise and dust. (See also Section 3.12 and Appendix B for a discussion of noise impacts.)

Because BPA's decision to proceed with the project would not be made until the agency has concluded its environmental review, it is not known who would build the project. If BPA decides to proceed, the agency would advertise for a contractor(s) to undertake the work. Based on past experience with projects of this size, it is reasonable to conclude that a contractor would use from 8 to 12 workers to clear the right-of-way and construct the access roads, and a similar number to construct the transmission line. All the work necessary to construct the project likely would take three to four months.

Because transmission line construction is highly specialized, few construction companies exist locally. While it is possible that a firm could be selected from the Seattle area, it is likely that bids also would be received from such places as Oregon, Idaho, and Colorado.

Clearing and access road work is less specialized than transmission line construction, and it is likely that local contractors could do this work. While research shows that non-local contractors spend as much as 40 percent of their income locally, the figure would be higher for local workers. Expenditures by both local and non-local contractors would have a positive but minor on the local economy due to the small number of workers and the short time required for construction.

Work would begin with a clearing crew who would remove tall growing vegetation in the right-of-way and danger trees. Access road work would be done concurrently with clearing, followed by construction of the transmission line. Then it is likely that Puget would transfer its distribution line along North Bend Way to BPA's wood pole structures. Construction impacts might include some disruption to normal traffic flow on private, city, and county roads, causing minor traffic delays or temporary road closures for brief

periods. Impacts would be temporary and limited to the immediate project area. No interruptions to traffic flow on I-90 are anticipated.

Construction of the proposed Tanner Substation is expected to cause only minor short-term construction impacts, because of the relative isolation of the substation site, off SE Alm Way, and the relative ease of access from the southeast, where no residents would be affected. This work would probably create only limited new employment opportunities locally, as Tanner would use existing employees for much of the work, and the manufacturer would install the substation's transformer.

**Growth Inducing Impacts.** The proposed action by itself is not expected to induce growth in the local area, although it enables it to occur. The proposed substation is intended to serve Tanner's existing customers in the local area as well as new customers. However, no single individual power sale is driving the need for this project, nor are any large scale power sales envisioned by Tanner or Puget as a result of the proposed action.

**Property Value Impacts.** The proposed transmission line is not expected to have long-term impacts on property values in the area. Whenever land uses change, the concern is often raised as to the effect the change may have on property values nearby. Zoning is the primary means that most local governments use to protect property values. By allowing some uses and disallowing others, or permitting them only as conditional uses, conflicting uses are avoided. Some residents consider transmission lines to be an incompatible use adjacent to residential areas. However, this feeling is not universal. Transmission lines are an allowed use in the zoning districts in which the line would be located. (See Figure 6 and Section 4.5, Plan and Program Consistency.)

The question of whether nearby transmission lines can affect residential property values has been studied numerous times in the United States and Canada over the last twenty years or so, with mixed results. In 1995, BPA contributed to the research when it looked at the sale of 296 pairs of residential properties in the Portland, Oregon metropolitan area (including Vancouver, Washington) and in King County, Washington. The study evaluated properties adjoining 16 BPA high voltage transmission lines (subjects) and compared them with similar property sales located away from transmission lines (comps). All of the sales were in 1990 and 1991 and adjustments were made for time and other factors. The results of the study showed that the subjects in King County were worth approximately 1 percent less than their matched comps, while the Portland/Vancouver area subjects were worth almost 1.5 percent more (Cowger et al. 1996).

BPA recently updated this earlier study using 1994/95 sales data. The sales of 260 pairs of residential properties in King County and Portland/Vancouver metropolitan areas were reviewed. The information confirmed the results of the earlier study, i.e., the presence of high voltage transmission lines does not significantly affect the sale price of residential properties. The residential sales did, however, identify a small but negative impact from 0 to 2 percent for those properties adjacent to the transmission lines as opposed to those where no transmission lines were present. Although this study identified a negative effect, the results are similar to the earlier study and the differences are relatively small (Cowger et al., no date, in draft).

Studies of impacts during periods of physical change, such as new transmission line construction or structural rebuilds, generally have revealed greater short-term impacts

than long-term effects. However, most studies have concluded that other factors, such as general location, size of property, improvements, condition, amenities and supply and demand factors in a specific market area are far more important criteria than the presence or absence of transmission lines in determining the value of residential real estate.

As a result of the proposed project, some short-term adverse impacts on property values (and salability) might occur on an individual basis; however, these impacts would be highly variable, individualized, and unpredictable. Constructing the transmission line is not expected to cause long-term adverse effects to property values along the right-of-way or in the general vicinity. Non-project impacts, along with other general market factors, are already reflected in the market value of properties in the area. These conditions are not expected to change appreciably. Therefore, no long-term impacts to property values are expected as a result of the proposed project.

**Property Tax Impacts.** The proposed action would have no direct beneficial effect on the local taxing districts because BPA, as a federal agency, is exempt from local taxes. Conversely, the proposed action could have a minor but negative impact on local taxing authorities if any properties are devalued as a result of limits the proposed easement might impose on the highest and best use of a parcel. Offsetting any such decrease, however, could be the increase in the amount of taxes collected by the taxing authorities as a result of the increase in development that might be enabled by the additional supply of power.

Only about 2.4 km (1.5 mi) of the 7.2-km (4.5-mi) transmission line would be on private property. No major property improvements would be removed nor would the use of a property be affected enough to substantially reduce property values and taxes. Therefore, no impacts to the local taxing districts are expected.

Taxes paid by Tanner Electric on the substation property could be considered a beneficial impact but would not significantly contribute to local revenues (see below).

**Sales Tax Impacts.** BPA, as a federal government agency, is exempt from paying state sales taxes (WAC 458-20-190), although any contractor retained by the agency is required to pay either a sales or use tax on the purchase of supplies and equipment used in the construction of the project (WAC 458-20-190).

In addition to the sales taxes that would be paid on the value of supplies and equipment used in project construction, sales taxes would also be collected on local expenditures made by construction workers. Although it is not known at this time who would build the project, should it be constructed, the construction crews would likely reside outside of the local area. Research shows that non-local workers typically spend about 40 percent of their pay locally. With an after-tax payroll of approximately \$800,000 for the transmission portion of the project, the proposed action would generate approximately \$26,000 in state sales taxes. While the tax revenues would be considered a beneficial impact, only a small percentage stays in the local community.

Tanner also would pay either a sales or use tax on the purchase of supplies and equipment to construct the substation, as well as property taxes based on the value of the facility. Although this combination of sales/use taxes and property taxes paid by Tanner could be

considered a beneficial impact to the local taxing district, the amount would contribute far less than 1 percent of either local or state revenues.

**Operation and Maintenance Impacts.** Operation and maintenance impacts are anticipated to be about the same as for other transmission lines in the area. (See also Section 3.11 Health and Safety.) Maintenance activities would include periodic helicopter or ground patrols to check the line to assure that it can be operated in a safe and reliable manner. BPA crews remove tall growing vegetation within rights-of-way every 2-8 years, depending on vegetation growth rates. Emergency repairs could be made at any time. Such routine and emergency activities are expected to be infrequent and minor, so these impacts are expected to be slight.

### ***3.9.3 Cumulative Impacts***

The cumulative socioeconomic impact of adding a transmission line and substation to the local infrastructure is a beneficial one in that the facilities ensure an adequate power supply for community needs.

The project is not expected to provide employment in numbers or for a duration that, when added to other employment opportunities in the area, would substantially affect the community's economic health. Likewise, the potential tax benefits and impacts are unlikely, even when combined with other activities affecting taxes, to measurably benefit or adversely affect either individuals or governments.

### ***3.9.4 Mitigation***

To mitigate the long-term impacts to property values as a result of any diminished use of property created by an easement across a property, BPA would compensate landowners based on any limitations of use or utility imposed by the right-of-way. Such limitations would be identified during the appraisal process.

## **3.10 CULTURAL RESOURCES**

### ***3.10.1 Affected Environment***

A number of federal laws and regulations have been enacted to protect the nation's archaeological, cultural, and historical resources. These include the National Historic Preservation Act, the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, the National Landmarks Program, and the World Heritage list.

The National Historic Preservation Act and the Archaeological Resources Protection Act were enacted into law to protect archaeological and historic resources from damage, desecration or loss to federally sponsored or permitted projects and from excavation or removal from federal and Indian lands. The American Indian Religious Freedom Act assures that federal activities do not impair access to religious sites and will not affect

ceremonial rites of American Indians. The National Historic Preservation Act requires that the effects of any federally assisted undertaking on cultural, archaeological or historic resources must be evaluated. For properties on or eligible for listing on the National Register of Historic Places, the responsible federal agency must consult with the State Historic Preservation Office (SHPO) regarding any potential adverse effects on resources of historic, archaeological, or cultural significance.

### ***3.10.2 Environmental Consequences***

BPA contracted with an archaeological and cultural resources firm, Historical Research Associates, Inc. (HRA) of Seattle, to undertake a literature review and field survey for the proposed project and one of the alternatives (Alm Way Alternative) in November, 1999. The firm completed its work in early March 2000. HRA located no significant prehistoric or historic cultural resources that would be affected by construction, operation, or maintenance of the proposed transmission line or substation (Appendix A). In a letter dated March 23, 2000, the SHPO concluded that no properties listed or eligible for listing in the National Register of Historic Places would be affected.

### ***3.10.3 Cumulative Impacts***

Constructing a new transmission line in the area could impact cultural resources not encountered during the cultural resources survey cited above. If additional cultural resources are encountered during construction activities, appropriate action would be undertaken to protect them.

### ***3.10.4 Mitigation***

If any archaeological artifacts, including any human skeletal remains, are encountered during project construction, BPA will fulfill its responsibilities under 36 CFR, Part 800 of the National Historical Preservation Act, by suspending all work in the area of impact, consulting with the SHPO and other involved agencies or tribes to assess the significance of the find, and developing mitigation measures, if warranted, to mitigate any damage to the resource. Should any archaeological resources be identified, BPA would comply with the requirements of the Archaeological Protection Act of 1979, which protects archaeological resources on publicly owned and Indian lands.

## **3.11 HEALTH AND SAFETY**

### ***3.11.1 Affected Environment***

**Safety Precautions.** Power lines, like electrical wiring, can cause serious electric shock if certain precautions are not taken. These precautions include building the lines to

minimize the shock hazard. All BPA lines are designed and constructed in accordance with the National Electrical Safety Code (NESC). NESC specifies the minimum allowable distances between the lines and the ground or other objects. These requirements basically determine the width of the right-of-way, the distance between structures, and the height of the line to limit electric field effects to acceptable levels.

People must also take certain precautions when working or recreating near power lines. It is extremely important that a person not bring anything, such as a TV antenna or irrigation pipe, too close to the lines. BPA provides a free booklet that describes safety precautions for people who live or work near transmission lines entitled *Living and Working Around High Voltage Power Lines*.

Power lines can also induce **voltage** into objects near the lines. This effect can lead to nuisance shock if a voltage is induced on something like wire fencing that is on wood posts and, therefore, insulated from ground, and on vehicles parked under the lines. Usually, however, this becomes a problem only with lines of voltages above 230-kV and is extremely unlikely to occur at this project. Should problems develop with either high- or low-voltage lines, they can be corrected by simple grounding techniques.

**Electric and Magnetic Fields.** Everything electrical, including power lines, household wiring and appliances, produces electric and magnetic fields (EMF). Movement of electrons in a wire (current) produces magnetic fields, and electrical pressure (voltage) produces electric fields. Both of these fields are reduced in strength with increasing distance from the source.

Electric Fields. Domestic electric fields are highly variable and, on average, typically range from 0.005 kilovolts per meter (kV/m) to 0.02 kV/m (Bracken 1998). Electric fields from household appliances are usually less than 0.1 kV/m at 30 cm (1 ft) (U.S. DOE 1995). Electric fields at the edge of a typical 115-kV right-of-way are 0.5 kV/m (U.S. DOE 1995). While electric fields are stronger near power lines than in typical residential settings, they are easily weakened by vehicles, trees, and buildings.

Magnetic Fields. Magnetic fields from power lines fluctuate with changing loads: the greater the load, the greater the magnetic field. Transmission line magnetic field strength also depends upon the number of lines, line design and line configuration (relative phasing of the conductors). A typical 115-kV line normally may be associated with a 6.5 milligauss (mG) magnetic field at the edge of the right-of-way (U.S. DOE 1995).

A large study (Zaffanella 1993) concluded that magnetic fields in residences exceeded 0.6 mG in half of the 996 homes studied. This study also found that power lines produced the largest average fields, residential grounding systems produced the highest overall fields, and appliances produced the highest localized fields. For example, the median field found near microwave ovens was 36.9 mG at a distance of 0.27 m (10.5 in) and 2.1 mG at 1.2 m (46 in). This last point illustrates the fact that magnetic fields close to appliances are often stronger than those beneath power lines. However, appliance-generated fields drop off much more rapidly with distance than those from power lines. The same researchers recently completed a large study of daily personal EMF exposures in the U.S. (Zaffanella and Kalton 1998), which concluded that the average 24-hour EMF exposure for the randomly selected participants was 1.2 mG.

Typical electric and magnetic field strengths for some BPA transmission lines are illustrated in Table 3.

### 3.11.2 Environmental Consequences

**Regulations.** There are no national standards for low-level electric or magnetic fields; however six states have established electric field standards for transmission lines. Only New York and Florida have established magnetic field standards. The State of Washington has not set a standard for either. BPA has set a maximum allowable electric field of 5 kV/m at the edge of its rights-of way and at road crossings. Additionally, BPA has set maximum allowable electric field strengths for 115-kV lines of 3.5 kV/m and 2.5 kV/m at shopping center parking lots and commercial/industrial lots respectively (Gens, Ralph, Chief Engineer, Bonneville Power Administration "Electric Field Strength Policy for BPA Transmission Lines," June 6, 1979). These levels are set to eliminate nuisance shocks. The proposed action would meet BPA's electric field standards.

**Table 3 Typical Electric and Magnetic Field Strengths from BPA Transmission Lines**

<i>Transmission Lines</i>	<i>Electric Fields</i> (kV/m) <sup>1</sup>	<i>Magnetic Fields</i> (mG) <sup>2</sup>	
		Maximum <sup>3</sup>	Average <sup>4</sup>
<b>115-kV</b>			
Maximum on right-of-way	<b>1.0</b>	<b>63</b>	<b>30</b>
Edge of right-of-way (50 ft)	<b>0.5</b>	<b>14</b>	<b>7</b>
61 m (200 ft.) from center	<b>0.01</b>	<b>1</b>	<b>0.4</b>
<b>230-kV</b>			
Maximum on right-of-way	<b>2.0</b>	<b>118</b>	<b>58</b>
Edge of right-of-way (50 ft)	<b>1.5</b>	<b>40</b>	<b>20</b>
61 m (200 ft.) from center	<b>0.05</b>	<b>4</b>	<b>2</b>
<b>500-kV</b>			
Maximum on right-a-way	<b>7.0</b>	<b>183</b>	<b>87</b>
Edge of right-of-way (65 ft)	<b>3.0</b>	<b>62</b>	<b>30</b>
61 m (200 ft.) from center	<b>0.3</b>	<b>7</b>	<b>3</b>
1. kV/m=kilovolt per meter 2. mG=milligauss 3. Under annual peak load conditions (occur less than one percent of the time) 4. Under annual average loading conditions 5. Measured from the right-of-way centerline. Note: Information on magnetic fields obtained from BPA study to characterize nearly 400 transmission lines in the Pacific Northwest.			

## **Health Effects.**

Electric Fields. Alternating current electric fields, such as those emitted from power lines, can create induced electric currents in people; however, these effects typically are associated with high-voltage lines (230-kV or higher) and are generally considered a nuisance. Electric fields are not associated with cancer. Induced current is extremely unlikely to occur at the edge of this project's right-of-way (7.6 m [25 ft] from centerline).

Magnetic Fields. Numerous studies have been conducted over the last 30 years in an effort to determine whether EMF is a carcinogen or has other detrimental effects on health. Recently two different groups of scientists reviewed all existing EMF research to determine the conclusions, if any, that could be drawn about the relationship of EMF and human health. The National Academy of Sciences (NAS) reviewed EMF research completed by 1995 for the National Research Council (NRC); and the National Institute of Environmental Health Sciences (NIEHS) reviewed EMF research completed by 1998 as part of the Electric and Magnetic Fields Research and Public Information Program. This program (referred to as the Department of Energy's (DOE) RAPID program) was authorized by the U.S. Congress in the 1992 Energy Policy Act (PL 102-486, Section 2118) and was administered and funded by DOE in 1999.

- The NAS committee concluded that: "The data at different biological complexities taken in total do not provide convincing evidence that electric and magnetic fields experienced in residential environments are carcinogenic." (NRC 1997:198) The committee also identified weakness in the research and suggested that more research is needed.
- The NIEHS concluded that while EMF exposure "cannot be recognized as entirely safe," the evidence for risk to cancer and other diseases was "weak" and the probability that EMF exposure is a health hazard is "small" and "...insufficient to warrant aggressive regulatory concerns." NIEHS found a lack of consistent positive findings in animal or mechanistic studies, but statistical studies looking at the incidence of disease in a population (epidemiology) raised concerns over childhood leukemia and adult chronic lymphocytic leukemia from occupational exposure to EMF. Because everyone is exposed to EMF and because the epidemiological studies showed areas of concern, the NIEHS recommend continued research and passive regulatory action to reduce EMF exposure.

**Magnetic Field Analysis and Exposure Assessments.** Because the state of the scientific evidence relating to EMF has not yet established a cause-and-effect relationship between electric or magnetic fields and adverse health effects, we are unable to predict specific health risks or specific potential level of disease related to exposure to EMF. We are, however, able to conduct exposure assessments of magnetic fields from transmission lines. Exposure assessments are estimates of the field levels to which people are potentially exposed.

An EMF exposure assessment is done by first estimating what future EMF levels would be without the new project. This analysis serves as a baseline measurement. Engineers then estimate the possible change in field levels assuming the proposed project is in

place. An increase in public exposure is defined as a situation where field levels with the new project will increase and buildings exist nearby.

Project-Specific Exposure Estimates. Calculations for this project's exposure assessment were based on the predicted normal system annual peak loads for 2005. Using peak loads for these calculations gives the worst-case scenario and significantly overestimates the potential EMF exposure. More realistic annual average levels would be less than half the peak values predicted in these calculations (see Figures 10-13).

- Calculations for this project's normal peak loading predict that there would be no change in EMF where the proposed project parallels the existing BPA 500-kV line. This is because the existing 500-kV line dominates the EMF profile. There is no increase in exposure because EMF levels did not increase (see Figures 10 and 11).
- Because there are no existing distribution or transmission lines on the proposed section of line running southeast from the 500-kV line to I-90, there would be an increase in EMF, but levels at the edge of the right-of-way will remain less than 3 mG (see Figure 12). There are no homes within 7.6 m (25 ft) of this section of proposed line, so there would be no increase in exposure.
- There is no significant increase in the magnetic field along the northern edge of the proposed right-of-way paralleling North Bend Way; however, there is a 1-mG increase along the southern edge (see Figure 13). This increase in magnetic field strength does not correspond to an increase in exposure to residences along North Bend Way because the increase would occur along the existing county easement, or on undeveloped land, and not in nearby residences.
- There also is a 1-mG increase along the southern edge of the transmission line as it parallels Alm Way. This increase does not correspond to an increase in exposure levels because there are no homes within 30 m (100 feet) of the right-of-way (see Figure 13).

### ***3.11.3 Mitigation***

The transmission line would be constructed so that two phases of the three-phase transmission line would be placed on the south side of the line. This configuration would minimize the magnetic fields at the edge of the right-of-way for residents on the north side of North Bend Way.

## **3.12 NOISE AND RADIO/TV INTERFERENCE**

### ***3.12.1 Audible Noise***

Construction activities and operation of some transmission facilities create noise. Construction noise could be heard intermittently over a 3-4 month period and would be limited to normal working hours. Typically it does not result in serious disturbances to residents.

Audible noise produced by transmission line corona is a hissing, popping, or crackling sound. It is primarily associated with lines of 345-kV and above. A 120-Hertz (Hz) “hum” is also occasionally super-imposed on the corona-generated noise. The sound level depends on the ambient noise level, conductor and tower geometry, operating voltage, and weather. Audible noise from transmission lines increases in wet weather.

The Noise Control Act of 1972 gives the states the responsibility for noise control. In Washington, this responsibility has been passed on to the counties. In unincorporated King County the county has responsibility for implementing the County Noise Ordinance. In the incorporated cities within King County, the cities have assumed this responsibility. North Bend has its own noise ordinance.

No transmission line noise is expected because the proposed transmission line is less than 345 kV. The proposed Tanner Substation will contain a 115/12.5-kV transformer. Transformers commonly transmit a low-frequency hum. Tanner Electric would use a transformer that would conform to the City of North Bend Noise Ordinance. See also the Environmental Noise Analysis (Section 3.12.3) and Appendix B.

### ***3.12.2 Radio and Television Interference***

Corona occurs where high electric field strength on conductors, insulators, and hardware imparts sufficient energy to charged particles to cause ionization (molecular breakdown) of the air. Corona may interfere with radio and television reception by generating a high-frequency noise called electromagnetic interference or EMI. EMI is the static sometimes heard over an automobile radio when driving beneath high-voltage lines. It is usually associated with higher voltage lines, i.e., 345 kV and above. Because the proposed 115-kV project is less than 345 kV, it should not interfere with radio or television reception.

Federal Communications Commission (FCC) regulations require that incidental radiation devices (such as transmission lines) be operated so that radio and television reception will not be seriously degraded or repeatedly interrupted. Furthermore, FCC regulations require that the operators of these devices mitigate such interference, should they occur. Overall, BPA receives very few radio interference (RI) or television interference (TVI) complaints. Essentially, all legitimate complaints are satisfactorily corrected. As a result of these factors RI/TVI impacts would be minimal.

### ***3.12.3 Environmental Noise***

Clearing vegetation between noise generating land uses (such as arterial roadways I-90 and North Bend Way) and noise sensitive properties (such as residential properties located adjacent to these rights-of-way) could affect the noise perceived by the residents. To determine the level of impact, BPA retained the services of McCulley, Frick & Glickman, Inc., a firm specializing in environmental consulting and engineering services, in Lynwood, Washington, to conduct a noise impact assessment. Their analysis (see Appendix B) found that the proposed project would not result in any discernible increase in noise to the residents near these arterial roads.

#### ***3.12.4 Mitigation***

BPA would rectify any TV/radio interference caused by the proposed project, although interference is not anticipated.



## **Chapter 4 Environmental Consultation and Permit Requirements**

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### **4.1 NATIONAL ENVIRONMENTAL POLICY ACT**

The National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.) requires preparation of an environmental impact statement for major federal actions significantly affecting the quality of the human environment. BPA prepared this environmental assessment to determine if the proposed action would create any significant environmental impacts that would warrant writing an environmental impact statement (EIS). No significant environmental impacts were identified. BPA has also prepared a finding of no significant impact (FONSI). BPA will make a decision about the project soon. If a decision is made to build the facility, BPA would protect, restore, and enhance the environment, where possible.

### **4.2 ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT**

Three plant species are federally listed in the state of Washington. They are the Nelson's Checker-mallow (*Sidalcea nelsoniana*) and the Water Howellia (*Howellia aquatilis*), which are threatened; and the Marsh Sandwort (*Arenaria paludicola*), which is endangered. There are no known occurrences of these plants in the project area (WDFW 1999b).

Four species of birds and two species of mammals are federally listed in King County, Washington. They are the bald eagle, peregrine falcon, marbled murrelet, northern spotted owl, grizzly bear and gray wolf. The Washington ground squirrel recently was listed as a candidate species under the Endangered Species Act. None of these species of birds or animals or their habitat is found in the project vicinity (WDFW 1999a and 1999b).

Three species of anadromous and resident fish were recently listed in King County: the chinook and coho salmon and the bull trout. WDFW indicated that none of these species exists above Snoqualmie Falls (Robert Feiffer, Fishery Biologist, WDFW, telephone conversation, November 11, 1999). Other sources support this conclusion that no bull trout or anadromous salmonid species are to be found in the upper Snoqualmie Basin, i.e., above Snoqualmie Falls (Washington River Information System database, 1999; Curt Kraemer, WDFW, telephone and written communication, February 16, 2000).

Based on the proceeding information, therefore, BPA has determined that the proposed action would not affect threatened or endangered species.

### **4.3 FISH AND WILDLIFE CONSERVATION**

Provisions of the Pacific Northwest Electric Power Planning and Conservation Act (16 USC839 et seq.) intended to protect, mitigate, and enhance fish and wildlife (particularly anadromous fish) of the Columbia River and its tributaries, do not apply to the proposed

action or alternatives because the alternatives (including the proposed action) would not adversely affect the Columbia River Basin.

#### **4.4 HERITAGE CONSERVATION**

See Section 3.10.

#### **4.5 STATE, AREAWIDE AND LOCAL PLAN AND PROGRAM CONSISTENCY**

It is BPA's intent to be consistent to the maximum extent practicable with the state, areawide and local environmental standards. BPA cannot be consistent, however, where it must meet other overriding Federal requirements, such as the National Electric Safety Code.

##### ***4.5.1 Memorandum of Agreement (between BPA and WDOE) on State and Local Government Review of BPA Projects in the State of Washington 1990***

The agreement requires that BPA provide full opportunity for state and local entities to review BPA activities for consistency with state and local environmental standards. Local governments may review BPA activities and make recommendations concerning consistency to WDOE. To this end, BPA and WDOE agree to cooperate fully in the review process and seek active and meaningful participation by local governments.

BPA consulted with state and local governments in developing and evaluating alternative routes (see Chapters 2 and 3). BPA prepared this environmental assessment and made it available for public and agency review for 30 days. BPA also held a public meeting during the review period to allow an additional opportunity to receive public input on the proposed project. Comments received at the meeting were used to prepare this Final EA. In addition, although WDOE agreed to complete its recommendation to BPA on consistency of its proposed activities within 30 days of commencement of its review, BPA has not received any comments from the WDOE on the Preliminary EA.

##### ***4.5.2 Washington State Law***

###### **Growth Management Act**

The proposed action complies with the Growth Management Act. The proposed BPA transmission line to serve Tanner Electric has been included in Puget Sound Energy's Long-range Facility Plan, and is included in King County's Utility Element, which is part of the King County Comprehensive Plan.

## Washington Administrative Code

BPA proposes to construct a portion of the line within the I-90 right-of-way. Near North Bend, I-90 is within the purview of the Greenway Trust. As such, the area is considered a scenic area. The following provisions of the Washington Administrative Code are relevant to the proposed project.

**WAC 468-34-280 Overhead Power and Communication Lines.** This section of the WAC recommends that longitudinal installations of power lines (on public rights-of-way) be of single-pole construction, and that joint-use single-pole construction is generally desirable and should be used whenever feasible.

The proposed project's design calls for the 115-kV transmission line to be supported by single wood pole structures within the I-90 right-of-way. The project, as proposed, therefore, is consistent with Section 468-34-280 of the WAC.

**WAC 468-34-290 and 468-34-300 Vertical Clearances and Location.** These sections require that vertical clearances for overhead power lines conform to the National Electric Safety Code and/or the clearances identified in the WAC, whichever are greater. The minimum clearances specified for 115-kV transmission lines are 10 m (32 ft) above the groundline, including roadways. The code also specifies that utility lines be located as near as practicable to the right-of-way edge while still maintaining a reasonably uniform alignment.

The project, as proposed, would conform to the minimum clearances, as required by the National Electric Safety Code, and is located close to the right-of-way edge except where the right-of-way boundary is irregular in shape. At that location, the line maintains a uniform alignment.

**WAC 468-34-330 Scenic Enhancements.** As described in Section 3.8, the Washington Department of Transportation has designated the I-90 corridor in the vicinity of the proposed project as BX. The BX classification covers the I-90 corridor from Mile Post 17 to Mile Post 34. BPA proposes to place a portion of the line in Mile 26 within the BX classification.

According to this section of the WAC:

*(1)...Aerial facilities may be allowed (in this zone) if found acceptable to the department based on design and/or location which will not detract from scenic values typical of those found in Classes A and B.*

*(2) Special exceptions may be made where one or more of the following conditions exist:*

*Power lines of voltage in excess of 35-kV, special design should be incorporated to minimize the visual impact of the facility.*

*Other utility locations are not available or are unusually difficult and unreasonably costly or are more undesirable from the standpoint of visual quality.*

*The placing of the utility underground is not technically feasible or is unreasonably costly.*

*The impact of the required undergrounding adversely affects the utility consumer rates or the long-term economics of the utility.*

At 115-kV, the line BPA is proposing to construct is in excess of 35-kV. To support the transmission line, BPA would use a single wood-pole structure design. The conductors would be non-reflective to reduce light and glare from the transmission line in sunlit conditions. BPA considered eight other route segments in addition to undergrounding the line. These alternatives are considered too costly or less desirable for a variety of reasons (see Section 2.3, Alternatives Considered But Eliminated). BPA therefore conforms to the requirements of WAC 468-34-330, or meets the special exceptions.

#### ***4.5.3 King County Plans and Ordinances***

##### **King County Comprehensive Plan (Chapter 12 of the Energy and Telecommunications Section)**

Section B "Utility Corridor Designation" of Chapter 12 recognizes that "Regardless of conservation efforts, the County's electrical transmission facilities need to be improved to meet existing demand and forecast growth." The purpose of the proposed project is to meet Tanner's current needs as well as to provide for the needs of future customers.

King County has adopted two policies under Section B:

- (1) ET-202 King County and the utilities should identify and preserve corridors to accommodate future electric power transmission and distribution lines. Corridor designation should include: identification of appropriate shared uses and recognition of the values provided by non-utility uses, such as recreation; recognition of County roads as utility corridors; and, evaluation of proposed facility plans on a system-wide basis, rather than project by project.*
- (2) ET-203 When new, expanded or upgraded transmission is required, use of existing corridors that have above-ground utilities should be evaluated first. King County should facilitate appropriate corridor sharing among different utility types and owners.*

Tanner Electric Cooperative, which serves approximately 2000 King County customers in the North Bend and Ames Lake areas, purchases its power from BPA which is delivered to Tanner on Puget's facilities. Puget's forecast for energy use in King County includes the power needs of Tanner Electric; and Puget's Draft GMA Electrical Facilities Plan (contained in Technical Appendix A to the King County Comprehensive Plan) identifies the proposed project as one of the 650 miles of new and upgraded transmission corridors and eight new substations needed to be added to their system. Therefore, the proposed action is found to be in compliance with King County Policy ET-202.

With respect to King County Policy ET-203, the proposed route would use a portion of an existing right-of-way (to the extent practicable) and will be designed to accommodate

an underbuild by Puget. Therefore, the proposed project is found to conform to King County policies to the extent practicable.

### **The King County Zoning Ordinance**

The proposed route would be located within two zoning districts in unincorporated King County: the UR (Urban Reserve) and the RA-5 (Rural-Residential-5 acre minimum) zones. Utility facilities, including high voltage electrical transmission lines, are permitted uses within these zones (21A.06.1350 and 21A.08.060A & B, of the King County Zoning Code).

### **King County Road Standards-1993**

Section 8.01 "Franchising Policy and Permit Procedures," and Section 8.02 "Standard Utility Locations within the Right-of-Way," are applicable to the proposed action.

Section 8.01 states:

*Utilities to be located within existing road right-of-way shall be constructed in accordance with current franchise and/or permit procedure and in compliance with these standards. In their use of the right-of-way, utilities shall be given consideration in concert with the traffic carrying requirements of the road which are namely, to provide safe, efficient and convenient passage for motor vehicles, pedestrians, and other transportation uses. And aesthetics shall be a consideration.*

BPA, and/or its contractor(s), would seek a franchise agreement (from the King County Road Department) to locate the proposed transmission line within the public right-of-way of North Bend Way and would comply, to the extent practicable, with the substantive standards of the county.

Section 8.02 "Standard Utility Locations within the Right-of-way," states:

*[U]tilities within the right-of-way on new roads or on roads where existing topography or storm drains are not in conflict, shall be located as shown in typical sections..., and as indicated below:*

*G. Electric Utilities, power, telephone, cable TV: Undergrounding is preferable, ...otherwise every new placement of utility structures shall conform to the following:*

*Utility poles...may be placed within the right-of-way and shall be as far from the traveled way or auxiliary lane as practicable.*

*1(a). On shoulder type roads [such as North Bend Way], poles or obstacles shall be located back of ditches and in accordance with criteria in Drawing 5-001. Drawing 5-001 states that utility poles may be located no closer than ten (10) feet to the edge of the traveled way, and no poles may be placed on the outside edge of a curve with a posted speed limit of 40 mph or over [such as North Bend Way] unless approved through a variance request. . . .*

*1(c). Notwithstanding the other provisions regarding pole locations described in these standards, no pole shall be located so that it poses a*

*hazard to the general public. Utilities shall place and replace poles with primary consideration given to public safety.*

*4. Locations of poles shall be compatible with driveways and other road features (i.e., they shall not interfere with sight distances, road signing, traffic signals, culverts, etc.) To the extent possible, utilities shall share facilities so that the minimum number of poles is needed.*

BPA will meet the substantive requirements of the King County ordinances to the maximum extent practicable.

#### **4.5.4 City of North Bend Plans and Ordinances**

##### **The City of North Bend Comprehensive Plan**

The City of North Bend's Comprehensive plan identifies the need for an additional electrical substation to accommodate the residents' needs over the next twenty years or so. Both Tanner and Puget agree to develop Tanner's proposed substation site to satisfy the combined need of both utilities. When Puget wishes to provide additional capacity within the City of North Bend for their own needs, they would do so as a part of the Tanner facility.

##### **City of North Bend Zoning Ordinance**

BPA would construct the proposed transmission line and energize Tanner's proposed substation in the Employment Park and the Parks/Open Space/Public Facilities zones in the City of North Bend. Defined as major utility facilities, transmission facilities are conditional uses within the zones. Tanner Electric Cooperative is obtaining a conditional use permit to build their substation (Tanner Substation) within the Employment Park Zone; however, BPA, as a federal government agency, is prevented by the Supremacy Clause of the U.S. Constitution from applying for a conditional use permit from the City of North Bend. BPA will, however, to the best of its ability, meet the substantive environmental requirements of the City of North Bend within these zoning districts.

##### **City of North Bend Road Standards**

The City of North Bend has road standards outlined in the North Bend Municipal Code, but they do not address construction of overhead power lines. The City would abide by the same County standards for North Bend Way and Alm Way that the County has adopted, according to the Assistant City Engineer (Melina Mantchev, City of North Bend, Department of Public Works, telephone conversation, December 17, 1999).

##### **City of North Bend Municipal Code Section 14.10.070 Public Agency or Utility Exception**

A public agency or utility may apply for an exception pursuant to this section if the application of this chapter would prevent the agency or utility from providing an essential service. The examiner would conduct an open record hearing, and approve the application for an exception if it were found that:

1) There is no practical alternative to the development proposal with less impact on sensitive areas; and 2) the development proposal minimizes the sensitive area impacts.

BPA is prevented from applying for local development permits by the federal supremacy clause of the U. S. Constitution. Therefore, BPA will not be making application to the City of North Bend for a public agency or utility exception. While prevented from following local government procedural requirements, BPA strives to achieve local government substantive requirements where possible.

Since it is not feasible for linear facilities such as transmission lines to go around sensitive areas, such as streams, BPA proposes to cross Gardiner Creek, a sensitive area within the City of North Bend.

To minimize any impacts, BPA proposes to span the creek and buffer area to the extent practicable, therefore, BPA would comply with the substantive standards of this ordinance.

#### **Section 14.10.230 Streams**

The proposed transmission line would cross Gardiner Creek, a Category 2 stream in the City of North Bend. The ordinance requires Administrative reviews for installing overhead utility lines (such as transmission lines) over Category 2 streams within the City of North Bend. BPA cannot apply to the City of North Bend for an administrative review, but will minimize the impacts to this sensitive area to the maximum extent practicable.

#### **Section 18.10.030 of the City of North Bend Municipal Code (Building and Dimensional Standards)**

The maximum height for structures within the City of North Bend is 35 feet. BPA is proposing to install poles in excess of this height (65-75 ft) to meet the electric clearance requirements of the National Electric Safety Code. As a result, BPA cannot comply with this section of the Municipal Code.

#### **4.6 COASTAL ZONE MANAGEMENT ACT CONSISTENCY**

The State of Washington has an approved Coastal Zone Management Program, which is implemented by the Washington State Department of Ecology (DOE). BPA, as an agency of the federal government, is subject to the Coastal Zone Management Act (CZMA), and is subject to the coordination and consistency requirements of the Act for all projects within Washington's Coastal Zone. Because the proposed transmission line project is in King County, and all of King County is within the Coastal Zone, BPA is subject to the requirements of the Act with respect to the proposed action.

The Coastal Zone Management Act (CZMA) requires that "each federal agency activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone shall be carried out in a manner which is consistent to the maximum extent practicable with the enforceable policies of approved state management

programs." 16 U.S.C. 1456 (c) (1) (A). These policies include the Shoreline Management Act, and state air and water quality requirements.

**Consistency Statement:** Based on the above evaluation, we have determined that the Tanner Electric Transmission Line Project will comply with the substantive environmental standards specified in the state and local planning documents for the State of Washington, King County, and the City of North Bend. The proposed action is, therefore, consistent to the maximum extent possible.

#### **4.7 WETLAND AND FLOODPLAIN PROTECTION**

See Section 3.6.

#### **4.8 FARMLAND PROTECTION POLICY ACT**

The proposed project location is on land zoned for non-farm use. Therefore, no farmland, as defined in the Farmland Protection Policy Act (U.S.C. 4201 *et. seq.*), would be affected by the proposed project.

#### **4.9 PERMITS FOR DISCHARGES INTO WATERS OF THE UNITED STATES**

In November 1990, the Environmental Protection Agency (EPA) adopted final regulation pertaining to storm water discharges into surface water bodies (40 CFR 122-124). The regulations require that National Pollutant Discharge Elimination System (NPDES) permits be obtained for construction activities, including clearing, grading, and excavation, that disturb 2 ha (5 ac) or more. Under Section 402 of the Clean Water Act (CWA), federal facilities are subject to these permitting requirements. BPA as a federal agency, however, has received a general permit under NPDES from EPA. BPA will use best management practices to ensure that no sediments reach surface waters during construction of the proposed project.

#### **4.10 GLOBAL WARMING**

The proposed project would clear approximately 6.4 ha (16 ac) of vegetation. These trees and plants would change from being collectors of carbon to emitters of carbon in the form of carbon dioxide (a greenhouse gas) as they degrade rather than grow. However, because the amount of clearing would be small, and because low-growing vegetation would re-vegetate cleared areas, the proposed project's contribution to global warming would be negligible.

#### **4.11 THE EXECUTIVE ORDER ON ENVIRONMENTAL JUSTICE**

The Executive Order on Environmental Justice (Executive Order 12898) was enacted in February 1994 to ensure that federal agencies do not unfairly inflict environmental harm on the economically disadvantaged and/or minority groups within the United States or any of its territories.

To ensure compliance with the executive order, each agency was required to develop a strategy outlining how it would address the intent of the order. The Department of Energy (DOE), of which BPA is a part, has developed a proposed environmental justice strategy that outlines the Department's approach, in order to identify DOE actions that may have a disproportionately high and adverse environmental effect on minority and low-income populations. The draft strategy focuses on developing a partnership with our stakeholders, i.e., affected communities, government agencies, tribes and the general public in the early stages of planning and implementation of environmental justice procedures.

The 1990 Census identified the ethnicity of North Bend and Snoqualmie to be predominantly Caucasian, i.e., 97.1 percent and 94.5 percent respectively; and the remainder to be primarily of the Asian, African-American and American Indian (USDC 1990). Section 3.9 describes the economic status of the local population.

Because of the low numbers of minority and economically disadvantaged people in the project area, the proposed action would not have an adverse impact on those groups. The proposed action, therefore, would not violate the Executive Order on Environmental Justice. In addition, however, and in the spirit of cooperation with the local community and its representatives, BPA has prepared this environmental assessment, and has issued the environmental document for public and agency review and comment before making a decision on the proposed action.

#### **4.12 FEDERAL INSECTICIDE, FUNGICIDE AND RODENTICIDE ACT (FIFRA)**

It is unlikely that herbicides would be used during project construction; however, herbicides might be used from time to time to maintain the right-of-way. Only EPA-approved herbicides would be used, selectively applied by licensed applicators according to label instructions. For more information on BPA's proposed vegetation management program, see BPA's Transmission System Vegetation Management Program Final Environmental Impact Statement (DOE/EIS-0285, May 2000) for a thorough discussion of compliance with pertinent standards.

#### **4.13 RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)**

No hazardous waste products would be used, discarded or produced by the proposed project. Any solid waste generated on site would either be recycled or properly disposed of in an approved landfill. Merchantable timber cleared from the right-of-way would either be sold, given to the landowners or disposed of according to appropriate

agreements. Slash remaining from clearing would either be scattered on the right-of-way to degrade, left as wildlife habitat, or disposed of in an approved landfill.

#### **4.14 REQUIREMENTS NOT APPLICABLE TO THIS PROJECT**

**4.14.1 Permits for Structures in Navigable Waterways.** The project would not involve construction, removal, or rehabilitation of any structures in navigable waters.

**4.14.2 Permits for Right-of-way on Public Lands.** The proposed project would not cross land administered by another federal agency; therefore, no permits for right-of-way on such lands would be required.

**4.14.3 Clean Air Act.** The proposed project is located in the Seattle/Tacoma Ozone Maintenance Area, but the project would not affect it. The proposed project will not result in emissions remaining under BPA's control. No burning would take place as a result of the proposed project. Trees/slash cleared would not be burned. Vehicles used during the construction of the proposed project would be maintained so as to minimize emissions.

**4.14.4 Safe Drinking Water Act.** No drinking water systems are affected by the project (see Section 3.4), and no pollutants are expected to reach drinking water supplies.

**4.14.5 Toxic Substances Control at Federal Facilities.** No toxic substances would be manufactured or used on this project.

**4.14.6 Energy Conservation at Federal Facilities.** Energy conservation practices are not relevant to the proposed project because no federal buildings would be constructed.

## Chapter 5 Persons and Agencies Consulted

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BPA has consulted with the persons and agencies listed below regarding the Tanner Electric Transmission Line Project. BPA is distributing this environmental assessment to all known interested and affected persons and agencies for further comment on the proposed action, alternatives and environmental impacts.

### Landowners

Kenneth Serack	Thomas and Ester Anderson
<u>Douglas Young</u>	Ginny King
<u>Deborah Bellum</u>	Sheila Wright
P.G. White	Alvin and Cheryl Wallace
Valdis Martinsons	Blake Randleman
James S Hoch	Kuan-Ming Chen
Daniel S. Cruz	Winlock and Carey Miller
Owen L. Walsh	Elizabeth and George Littlewood
Lawrence G. Thompson	Donna and Clifford Cervine
<u>Gary and Michelle Gustafson</u>	Doris Waugamon
James O. Stewart	Michelle and Gary Gustafson
Robert and Karen Gordon	Elizabeth and Carey Miller
Sharon O. Molnar	Conner Homes
Paul Boulanger	<u>Northwest Railroad Museum</u>
Bernie Griwatz	<u>Weyerhaeuser Company</u>
Mark Hennig	Snoqualmie Hills Joint Venture
Scott Brown	Snoqualmie Ridge Business Park
Allan Errington	WRECO (Weyerhaeuser Real
Nathan Kositsky	Estate Co.)
Jay Wilson	Loveless and Dillon Inc.
Leslie Peppin	

### Federal Agencies

Office of Federal Register, National Archives and Record Administration

### State Agencies

Washington State Department of Fish and Wildlife  
Washington State Department of Community Trade and Economic Development,  
Office of Archaeology and Historic Preservation  
Washington Department of Transportation  
Washington Department of Natural Resources  
Washington State Department of Revenue

### Local Agencies

City of North Bend, Department of Community Services

City of North Bend, Department of Public Works  
King County Assessor's Office  
City of Snoqualmie  
King County Historic Preservation Program  
King County Department of Developmental and Environmental Services  
King County Road Department, Traffic Engineering Section  
King County Department of Transportation, Utility Inspection Unit  
King County Department of Natural Resources, Water and Land Resources  
Division  
King County Office of Regional Policy and Planning, King County Courthouse  
King County, Permitting Section  
Puget Sound Regional Council, Seattle, Washington

## Chapter 6 Glossary

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**Bonneville Power Administration (BPA)** The federal power marketing agency under the Department of Energy (DOE) responsible for marketing wholesale electric power from 30 federal dams and one federal nuclear plant throughout Washington, Oregon, Idaho and western Montana, and portions of California, Nevada, Utah and Wyoming. BPA also sells and exchanges power with utilities in Canada and California.

**Bulk power** High-voltage power (usually at 115, 230 or 500-kV) that is normally delivered to a substation before being stepped down to lower voltages through transformers, for distribution to serve local loads.

**Capacity** The maximum load that a generator, piece of equipment or substation, transmission line or system can carry under existing service conditions.

**Circuit** A system of conductors through which an electric current is intended to flow.

**Conductor** Any metallic material, usually in the form of wire, cable, or bar, suitable for carrying an electrical current.

**Connected action** Within the meaning of NEPA, a connected action is an action that is enabled by the proposed action, but not one that would be a part of the action proposed by the project sponsor.

**Danger tree** Any tree growing adjacent to and outside of the transmission line right-of-way which is a present or future hazard to the transmission line. A tree is considered a danger tree if it would contact any of the conductors should it fall, bend, or grow within a given swing displacement of the conductors within a specified growth period (usually five years). Trees that are both stable and unstable are included.

**Dead-end tower** A heavy tower designed for use where the transmission line loads the tower primarily in tension (pull) rather than compression (downward push), such as in turning large angles along a line or bringing a line into a substation.

**Distribution** The transport of electricity to ultimate use points, such as homes or businesses, from a source of generation or from one or more substations.

**Double-circuit** To place two separate electrical circuits on the same transmission structures or poles. Each circuit contains three separate conductors or bundles of conductors.

**Electrical line losses** The electric energy lost (dissipated) in transmission and distribution lines. The amount varies with current (amperes) of the line. If the current doubles, the losses increase by a factor of four. Line losses increase with length of line.

**Full requirements customer** Publicly owned utilities that buy all of their power from BPA. Also referred to as "metered requirement customers."

**Human environment** The human environment includes both the natural and social environment.

**Load** The amount electric energy delivered or required at any specified point or points on a system. Load originates primarily at the energy using equipment of consumers, such as heaters, air conditioners, lights and motors. At BPA, load includes delivery to direct service industries (Note: Load is slightly larger than metered energy because of normal transmission and distribution losses in delivery from generator to consumer). Because loads are used to determine resource requirements, forecasts of electricity use are converted to loads.

**National Electrical Safety Code** Written standards for the design, construction, maintenance and operation of electric supply and communication lines, equipment, and supply stations in order to safeguard persons from hazards associated with those activities.

**National Environmental Policy Act (NEPA)** A 1969 federal law that requires evaluation of the environmental impact of federally-funded projects and programs.

**Non-generating utility** A utility that does not own or contract for generation to serve its loads (see loads, above) but buys power from suppliers.

**Palustrine emergent wetland** Non-tidal wetlands dominated by rooted herbaceous (non-woody) vegetation (e.g., sedges, rushes, cattails) which may be temporarily to permanently flooded at the base but which do not tolerate prolonged inundation of the entire plant; e.g. marshes, fens, bogs, and wet meadows.

**Palustrine forested wetland** Non-tidal wetlands dominated by trees; e.g., forested swamps and bottomland forests.

**Palustrine scrub-shrub wetland** Non-tidal wetlands dominated by woody vegetation less than 6 m (20 feet) high; e.g., shrub swamps, shrub carrs, and pocosins.

**Point of delivery** A point where a utility connects with BPA's transmission system and where BPA delivers power. The delivered power is metered and there is a change of ownership.

**Puget Sound Energy** Puget Sound Energy is an investor-owned utility that serves customers in King and Snohomish counties.

**Right-of-way** An easement for a certain purpose over the land of another, such as a strip of land used for a road, electric transmission line ditch or pipeline. BPA usually acquires easements for its transmission lines, roads and other facilities such as guys and anchors.

**Single-circuit** One electrical circuit consisting of three separate conductors or three bundles of conductors.

**Substation** A non-generating electrical power station that serves to transform voltages to higher or lower levels, and that serves as a delivery point to individual customers such as utilities or large industrial plants. The BPA system has more than 400 substations.

**Tanner Electric Cooperative, Inc.** An electric cooperative in King County, Washington.

**Transmission line** A high-voltage power line used to carry electric power efficiently over long distances.

**Tap Point** The point on a transmission line where a power line to a substation is connected.

**Voltage** The driving force that causes a current to flow in an electric circuit. Voltage and volt are often used interchangeably.

**Voltage drop** The difference between the voltages at the transmitting and receiving ends of a feeder, main or service line. With alternating current, the voltage drop is not necessarily equal to the straightforward algebraic difference of the voltages at the two ends.

**Underbuild** The placement of a distribution line on the same poles as those used to carry a transmission line.

**Wheel, Wheeling** The transmission by an entity that does not own or directly use the power it is transmitting. Wholesale wheeling is used to indicate bulk transactions in the wholesale market, whereas retail wheeling allows power producers direct access to retail customers. The term is often used colloquially to mean "transmission."



## Chapter 7 References

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## Chapter 8 Public/Agency Comments and Responses

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BPA released the Preliminary Environmental Assessment for a 30-day public and agency review in May 2000. During that time, BPA received comments orally, via e-mail, and by letter. In addition, BPA received comments at a public open house held in the City of North Bend, Washington on Monday, June 5th, mid-way through the comment period.

All comments received during the review period, as well as those that came in following “close of comments,” are contained in this chapter, organized by chapters in the Preliminary EA.

As a result of the comments received, changes to the Preliminary EA have been made in this Final EA. Substantive changes to the document have been underlined. Since this is an entirely new chapter, the text has not been underlined so that it is easier to read.

### PURPOSE AND NEED (CHAPTER 1)

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**Comment 1-1:** *Tanner’s load is all for commercial customers and not for the benefit of the people.*

**Response:** Tanner's customers are 80 percent residential and 20 percent small commercial businesses. Tanner has no large commercial customers.

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**Comment 1-2:** *Who are Tanner’s customers?*

**Response:** See response to Comment 1-1.

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**Comment 1-3:** *What business structure does Tanner Electric operate under?*

**Response:** Tanner Electric is a electric cooperative with a nine member board of directors who set policy and approve rates, and a general manager who is responsible to accomplish the work that needs to be done. As an electric cooperative, the customers share in the ownership of the company.

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**Comment 1-4:** *Is this project just to meet current load?*

**Response:** No, the proposed project is needed to meet Tanner's current load and both Tanner and Puget's future loads in the North Bend area.

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**Comment 1-5:** *How long will the capacity needs be met with the new line?*

**Response:** The proposed line should meet Tanner and Puget's needs well into the third decade of the 21<sup>st</sup> Century.

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**Comment 1-6:** *Will there be a justification for running yet another power line (in the area) in the near future?*

**Response:** BPA proposes to build a new end point at BPA's Echo Lake Substation for the existing Shultz-Raver No. 1 500-kV transmission line in 2002. This project, named the Kangley-Echo Lake Project, is currently under environmental review. BPA has no plans for any other transmission line in the local area at the present time. If the need arises for an additional transmission line, BPA would notify the affected public of the need for the line prior to initiating any environmental review.

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**Comment 1-7:** *We are concerned about getting a guarantee that in the future, more huge (power) lines will not come through and all the trees will be gone.*

**Response:** While BPA cannot promise that no new power lines would be located in the area in the future, BPA can promise that we will inform the affected publics and government agencies as early as possible when we have identified a need for a project that would impact the community.

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## ALTERNATIVES INCLUDING THE PROPOSED ACTION (CHAPTER 2)

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**Comment 2-1:** *What route has been selected?*

**Response:** BPA has not yet selected any route. The decision to build the line has not yet been made. BPA proposes to build a transmission line along a proposed route as identified in Section 2.1.1 Proposed Line Route of this EA, but any decision to build the line would be made following the completion of the environmental review.

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**Comment 2-2:** *The preferred route appears to be the same corridor that was proposed by Puget Sound Energy in their clearing permit application to DDES in 1997 for this project.*

**Response:** The proposed route generally follows the same corridor that was proposed by Puget, however, the specific placement of the line differs from that proposed by Puget along SE 356<sup>th</sup> Avenue and within the City of North Bend.

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**Comment 2-3:** *What are the load limits of the existing substation?*

**Response:** Tanner is presently served out of Puget's North Bend Substation. The substation cannot be expanded because Puget's existing transmission line that serves North Bend Substation is being operated "at capacity." If capacity were available on Puget's line serving the substation, additional power could be made available to Tanner Electric without the need to build a new substation and a new transmission line in the North Bend area.

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**Comment 2-4:** *Is the proposed transmission line going to be undergrounded?*

**Response:** No, BPA is no longer considering undergrounding the transmission line. BPA did consider undergrounding a portion of the transmission line along the North Bend Way right-of-way at the request of landowners in the area. However, this alternative was rejected due to the high cost of placing the line underground (see also Section 2.3.2 of this document).

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**Comment 2-5:** *How wide will the swath be for the right-of-way?*

**Response:** The right-of-way on private land would be 15 m (50 feet) wide. See also Section 2.1.3, Proposed Right-of-Way.

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**Comment 2-6:** *I do not want the line on my property. Why can't it be moved to WRECO property?*

**Response:** BPA has sited a portion of the right-of-way within the existing 46 m (150-foot) wide BPA right-of-way, before jogging to the west at the point where SE 356<sup>th</sup> Avenue also jogs to the west. From the point where the right-of-way jogs to the west, the proposed right-of-way would be on WRECO property. Siting the right-of-way along the proposed alignment has a number of benefits over locating the line elsewhere in the project area. It uses a vacant portion of an existing right-of-way, minimizing the amount of new right-of-way that would need to be purchased. It would minimize the amount of clearing that would be needed for the right-of-way since it would use an already cleared area (SE 356<sup>th</sup> Avenue); and it preserves the landscaped buffer for those properties in the southern half of Section 36, though some danger trees may need to be removed from this buffer area.

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**Comment 2-7:** *Why can't the line go on Weyerhaeuser property?*

**Response:** BPA considered locating the line on Weyerhaeuser property across the Snoqualmie Ridge Business Park. However, this alternative was dropped from further consideration due to the cost of acquiring land within the business park (see also Section 2.3 Alternatives Considered but Eliminated, and Section 2.3.1 Alternative Route Segments, Segment A [Quadrant Alternative]).

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**Comment 2-8:** *Why don't you build along the existing line (Puget's Snoqualmie-North Bend Line)?*

**Response:** When the need for the proposed action was first identified, a number of alternatives in or near the City of Snoqualmie were considered that used existing Puget rights-of-way or corridors. These were dropped for various reasons early in the process. Included in the options considered was expanding the Snoqualmie Substation and building the line through the City of Snoqualmie. At the time Puget explored a number of alternatives to meet Puget's and Tanner's need, BPA supported Puget's findings and determinations about why these various options were unreasonable. This led to Puget, Tanner and BPA entering into a settlement agreement, entitled the North Bend Settlement Agreement, as outlined in Section 2.1, Proposed Action.

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**Comment 2-9:** *What about building from Snoqualmie southwest to Weyerhaeuser Snoqualmie Mill?*

**Response:** Please see response to Comment 2-8.

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**Comment 2-10:** *Look at an alternative through golf course, past welding shop?*

**Response:** Please see response to Comment 2-8.

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**Comment 2-11:** *Why don't you consider utilizing Puget's Snoqualmie Lake line and then follow Cedar Falls-Snoqualmie line? We have no basis to compare to other alternatives. Double-circuit alternative above should be included in the EA.*

**Response:** Puget considered tapping the Cedar Falls-Snoqualmie transmission line early on, but dropped the alternative from further consideration because the line serves 30 taps between the two substations. Also, building a second transmission line in the same right-of-way, i.e., constructing a double-circuit line, presented a reliability issue with respect to both lines going down in the same event. See also response to Comment 2-8.

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**Comment 2-12:** *I haven't seen a cost comparison of all the alternatives in the EA. This should be included.*

**Response:** BPA did not identify costs of all the alternatives. Some alternatives (segments) were removed from further consideration because of costs (Segment A, and the Underground Alternative) and others for environmental/technical concerns (Segments B, C, D, E, F, G and H). See Section 2.3 and Comment 2-8.

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**Comment 2-13:** *D Creek has been so trashed by Snoqualmie Business Park Park, I don't know why clearing around D Creek carries such weight.*

**Response:** The alternative segment to the proposed route (Segment A, Quadrant Alternative) was dropped from further consideration primarily due to high land costs within the business park. A second reason the alternative segment was dropped was because it required more clearing over D Creek than would be needed if the right-of-way were to share a portion of BPA's existing Echo Lake-Monroe right-of-way across D Creek.

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**Comment 2-14:** *Cost/benefit comparison done in a balanced way: that political issues are called political issues (not written over) that's what I would really like to see. Use same criteria for all alternatives.*

**Response:** Please see responses to Comments 2-8 and 2-12.

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**Comment 2-15:** *Why can't the transmission line be buried?*

**Response:** BPA considered burying a portion of the transmission line within the North Bend Way right-of-way, but this alternative was eliminated from further consideration due to high costs (see Section 2.3.2 Underground Alternative, under Section 2.3 Alternatives Considered but Eliminated).

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**Comment 2-16:** *City of Snoqualmie - Future utilities will be undergrounded. Can you go around the downtown area?*

**Response:** Our understanding is that all new utilities within the City of Snoqualmie are to be placed underground, not only in the downtown area.

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**Comment 2-17:** *Why were alternatives not discussed in more detail?*

**Response:** BPA has prepared this EA under the National Environmental Policy Act of 1969, as amended. EAs are intended to be concise environmental documents that

are prepared to determine if the action, as proposed, would create any significant or potentially significant environmental impacts. None were found. If significant impacts were identified, BPA would be required to write an environmental impact statement, and analyze a reasonable range of alternatives in detail.

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**Comment 2-18:** *The EA should more thoroughly consider some of the excluded alternatives depicted in Figure 4, particularly Segment F.*

**Response:** See Comments 2-8 and 2-17.

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### LAND USE (CHAPTER 3)

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**Comment 3.2-1:** *Would BPA move one of the steel structures (on the Echo Lake-Monroe) 500-kV line) in the project area?*

**Response:** Yes, one of the steel structures supporting the Echo Lake-Monroe 500-kV transmission line would need to be moved to accommodate the crossing of the proposed line under the higher voltage line. The steel structure would need to be relocated about 15 m (50 feet) to the south, and also would need to be raised from 4.5 to 7.5 m (15 to 25 feet). BPA would work with the landowner to relocate the structure.

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**Comment 3.2-2:** *The road in dry season gets dusty, and during the wet season it gets hydraulic seepage and it gets real boggy.*

**Response:** Dust abatement is a requirement in BPA's construction specifications and is the responsibility of the contractor. Dust abatement would either be undertaken as needed through use of a watering truck, or would be handled by a one-time application of cellulose slurry designed for that application. The contractor's charge would be to prevent any fugitive dust from leaving the work site in measurable quantities. The method used would be the contractor's decision. During wet periods, BPA would lay down rock on any new or existing access road where rock would be required, such as in seepage areas. Roads would be designed to prevent rutting.

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**Comment 3.2-3:** *Can speed control be put into easement agreement for access road?*

**Response:** BPA would include safety measures in contract specifications to address residents' concerns.

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**Comment 3.2-4:** *My fence was bent down at the top and split in the middle by BPA's surveyors. I want it fixed.*

**Response:** BPA regrets that any damages were created. If any such damages were caused by BPA personnel or its contractors, BPA would return the property to its former condition.

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**Comment 3.2-5:** *The access gate to the Echo Lake-Monroe transmission line right-of-way was torn off at its hinges, and another gate appeared in its place. Also the BPA lock was on the chain that had been cut.*

**Response:** BPA will look into the matter and follow up with the landowner.

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**Comment 3.2-6:** *I would like the stumps removed and my pasture back bladed, and all wood debris removed from my property.*

**Response:** BPA would consider removing the stumps of trees cleared as a part of this proposed project. With regard to back-blading the pasture, if agricultural soil is compacted by construction, the contractor would be responsible for returning the parcel to its preconstruction condition, which may involve subsoiling the affected parcel. The contractor would also remove wood debris, as requested by the landowner.

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**Comment 3.2-7:** *I think the access road (96<sup>th</sup> Way) is half on my property and half on my neighbor's property.*

**Response:** Comment noted.

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**Comment 3.2-8:** *There is a 1/2-inch water main coming from Quadrant property as mitigation (to another project). The property owner wants BPA to make sure that this fact is referenced in the contract specifications as an existing utility line to be avoided.*

**Response:** BPA's contract with the contractor would include a clause that requires the contractor to locate buried utilities. BPA would include the water line in the contract specifications as an area to be avoided.

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**Comment 3.2-9:** *Glad that the existing steel tower (Structure 2/4 of the Echo Lake-Monroe line) would be moved further away from my driveway.*

**Response:** BPA would work with the landowner to site the steel structure so that the new location would meet the needs of both BPA and the landowner.

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**Comment 3.2-10:** *No longer happy with moving the line west of the road. Now want it moved way onto WRECO property.*

**Response:** BPA has proposed an alignment along the westside of SE 356<sup>th</sup> Avenue. Siting the facility adjacent to SE 356<sup>th</sup> Avenue would also use an already cleared area (for SE 356<sup>th</sup> Avenue). Moving the proposed right-of-way farther to the west would create an adverse land use impact because it would create a slice of unusable land. Moving the proposed right-of-way farther west would also require additional clearing and other costs that could be avoided using the proposed alignment.

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**Comment 3.2-11:** *Concerned about any damages (intentional or unintentional) that would occur during project construction.*

**Response:** BPA holds the contractor liable for any damages caused by its action or inaction associated with project construction, should the project be implemented. BPA would have a construction inspector on duty at all times during project construction. Any problems associated with safety or damage to real or personal property associated with project construction should be brought to the inspector's attention as soon as possible.

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**Comment 3.2-12:** *Concerned about the culvert's ability to withstand weight of heavy equipment. Our utilities go through there, and when the road washes out, we lose power.*

**Response:** BPA would reinforce any existing access road where rights would be acquired to use the road. The reinforcement would accommodate the heavy weight of construction equipment. BPA would inspect this culvert to avoid any damages. If the culvert would need to be replaced or the road reinforced prior to construction, the work would be undertaken after talking with the landowner.

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**Comment 3.2-13:** *Pickups with dual tires create ruts in our road that funnel water onto the road.*

**Response:** BPA appreciates this information. This access road may need to be reinforced if BPA acquires rights from the landowner to use this access road for construction and maintenance.

---

**Comment 3.2-14:** *What is the length of the construction season? What are the hours of operation? We don't want to be sitting for a half an hour trying to go to work while trucks get out of the way.*

**Response:** Due to the mild winters in central King County, the length of the construction season would likely be year-round. Normal hours of operation during the fall are 7:00 am until dusk, Monday through Friday. Some work may continue into Saturdays, but Saturday work is not part of the normal workweek. BPA would include requirements in the construction specifications to direct traffic according to the Uniform Traffic Code and to not unduly delay local traffic.

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**Comment 3.2-15:** *We have safety concerns about logging trucks and construction equipment during construction.*

**Response:** BPA is also concerned about safety. The contractor selected would be required to use caution in conducting work. BPA's construction inspector during project construction should notice unsafe operation of any vehicles or equipment. Any safety violations would be brought to the contractor's attention immediately, and also logged into the construction inspector's daily report.

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**Comment 3.2-16:** *Are you going to increase the width of the existing access roads?*

**Response:** The access roads used for project construction need to be a minimum of 3.6-m (12-feet) wide, and wider at turns. Depending on the severity of the radius of the turn, the width of the roads at these locations could be as much as 6 to 6.7 m (20 to 22 feet).

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**Comment 3.2-17:** *What about rebuilding the roads, putting in ditches, gravel etc.?*

**Response:** BPA prefers to use existing access roads rather than constructing new roads. It is less expensive, and impacts the environment less. Where any improvements would be needed to use existing access roads, BPA would make such improvements. This may include putting in ditches and culverts and bringing in additional gravel.

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**Comment 3.2-18:** *How would BPA address dust abatement?*

**Response:** See response to Comment 3.2-2.

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**Comment 3.2-19:** *We want speed limitation during construction. Concerned about dust, and the safety of our dogs and children.*

**Response:** BPA requires the contractor and any subcontractors employed on the job to operate all equipment and vehicles in a safe manner. BPA can put traffic requirements into the construction specifications. Any violations of the requirements would be noticed by the BPA construction inspector on-site, and would be brought to the contractor's attention immediately. BPA would also appreciate any notification by residents, should anyone notice any apparent violation of safety concerns related to project construction activities.

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**Comment 3.2-20:** *Some residents are concerned that Puget and/or other utilities would be allowed to underbuild without buying the rights from the landowners.*

**Response:** No utility would be allowed to hang any utility line on BPA power poles without first obtaining permission from BPA and the underlying property owner.

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**Comment 3.2-21:** *We want some type of agreement limiting use to access roads only and no other portions used for turnarounds. Don't want equipment turning around in our driveway.*

**Response:** BPA and its contractors are only allowed on private property where access rights have been acquired. Occasionally, BPA personnel or its contractors could be faced with the need to turn around at a location where no rights have been acquired (a driveway, for example). BPA would caution the contractor about the sensitivity of this issue in the project area, particularly with respect to individual landowners who have let BPA know of their concern. BPA and its contractors would respect the landowner's wishes and only use those access roads where rights have been secured.

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**Comment 3.2-22:** *We want limited intrusion into our property.*

**Response:** BPA and its contractors would abide by the wishes of the landowner. See Comment 3.2-21.

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**Comment 3.2-23:** *Certificate of Segregation on WRECO property in Section 35, south of the Quadrant Business Park. There are 20-acre tracts that were monumented by ESM of Federal Way. The contact at ESM is Cindy Flood, 253-838-6113.*

**Response:** Comment noted.

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**Comment 3.2-24:** *Last year they went into these 20-acre tracts and did clearing and road improvement for a thinning contract next year.*

**Response:** Comment noted.

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**Comment 3.2-25:** *We have updated wetlands delineation, mapped and a new topographical map, but no significant tree survey.*

**Response:** Comment noted. BPA appreciates receiving this information.

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**Comment 3.2-26:** *Along the section line between Sections 35 and 36, we anticipate a buffer for Snoqualmie Ridge Phase II or JPA (Joint Planning Area) between King County, City of Snoqualmie and WRECO. We have begun the annexation process into Snoqualmie and we will physically begin the infrastructure within three years.*

**Response:** Comment noted. If BPA decides to go forward with the project, as proposed, the BPA transmission line would be an existing feature at the time the land would be developed.

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**Comment 3.2-27:** *Extending Douglas Road into Section 36 will require an extensive public process. The developers (Connor Homes) have just recently been delayed again by Snoqualmie's requiring them to find alternative access.*

**Response:** Sufficient clearance would be provided in the design of the line to accommodate a public right-of-way beneath the line, should one be dedicated in the future.

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**Comment 3.2-28:** *Waterline into Jay Dutczak's property is a 2-inch line, the meter is on Quadrant property. WRECO gave Mr. Dutczak an easement across Quadrant from the meter east to his property line. The design map and the ditch where Jay installed his waterline are not matching. We will need to find out where it is and change the map. We also need to add the waterline to the land use agreement that will be issued to the City of Snoqualmie for Weyerhaeuser's Snoqualmie Ridge Project.*

**Response:** BPA appreciated being notified of the existence of this waterline and also that the location of the water line differs from where it is purported to be on the design drawings. BPA would identify the proper location of this waterline in the field and also alert the contractor in the construction specifications as a caution, should the line be built.

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**Comment 3.2-29:** *Dollars don't matter, i.e., \$10,000 is not enough; maybe one million would be enough.*

**Response:** BPA pays fair market value for any rights secured, and the value is established during the appraisal process.

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**Comment 3.2-30:** *Not interested in selling any more easements on their property. We just want to be left alone.*

**Response:** Comment noted. BPA understands that not all property owners along the proposed alignment are willing to sell BPA an easement across their property. Any rights obtained across such properties would need to be acquired through the condemnation process.

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**Comment 3.2-31:** *Are there any plans for a substation at the crossing of BPA's 345-kV line and Puget's 115-kV line?*

**Response:** We assume the commentor is referring to the crossing of Puget's Snoqualmie-Lake Tradition No. 1 115-kV transmission line and BPA's Echo Lake-Monroe 500-kV transmission line near the tap point of the proposed project. For more information, please see Section 1.3, Other Projects in the Area, Puget Projects.

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**Comment 3.2-32:** *Why is there a jog in the 115-kV line along the 500-kV right-of-way?*

**Response:** There is a jog in the 115-kV line so that the line could be located on the west side of the SE 356<sup>th</sup> Avenue in the southern half of Section 35, near the City of Snoqualmie. The alignment was chosen after conferring with a number of the affected landowners in this part of the project area, including representatives of the Weyerhaeuser Corporation. The alignment on the west side of the SE 356<sup>th</sup> Avenue preserves the landscaped buffer between the homes east of SE 356<sup>th</sup> Avenue and the road, and it takes advantage of the already cleared area where SE 356<sup>th</sup> Avenue is located, minimizing the clearing that would otherwise be required.

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**Comment 3.2-33:** *Vehicles will not be allowed off roads. Who will enforce this?*

**Response:** Project related motorized vehicles are required to use only those access roads on private property where rights have been obtained. This would be enforced by the BPA construction inspector.

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**Comment 3.2-34:** *Concerned that our open area by the game trail will be used as a turn-around and we don't want them to use this area since BPA has not obtained rights to be there.*

**Response:** BPA and its contractor(s) are required to use private land only where BPA has acquired land rights. BPA's standard language in the construction specifications require the contractor to stay on those private roads where rights have been obtained by BPA.

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**Comment 3.2-35:** *We have an existing culvert that keeps the road open; we don't need it blocked by debris.*

**Response:** If BPA acquires rights to use this road, BPA or its contractor, would ensure that the culvert not be blocked with debris associated with construction related activities.

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**Comment 3.2-36:** *Will you need to strengthen crossing over culvert to handle heavy construction equipment/vehicles just before Gordon's driveway?*

**Response:** BPA would make road improvements, where necessary, on private roads where land rights have been obtained. Where culverts need to be reinforced, BPA would do what is necessary, after first conferring with the landowner about what improvements need to be made.

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**Comment 3.2-37:** *You're establishing a whole new right-of-way and not taking advantage of utilizing the existing right-of-way.*

**Response:** From the tap point south, over a distance of approximately 1000 m (0.6 mile), BPA would use the western 8.4 m (27 1/2 feet) of the existing 46 m (150 foot) wide Echo Lake-Monroe 500-kV transmission line right-of-way. In addition, BPA would use existing public road rights-of way over half of the existing 7-km (4.5-mile) right-of-way between the proposed tap point and the proposed substation site. State, county and city rights-of-way would be used.

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**Comment 3.2-38:** *I believe the line should be moved farther west onto Weyerhaeuser property since it doesn't affect landowners.*

**Response:** BPA sited the proposed transmission line in the southern half of Section 35 to minimize land use impacts to the developed and undeveloped land use resources. See also response to Comment 3.2-10.

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**Comment 3.2-39:** *There's an obligation to explain rationale of decision-making process. That should be done in a public way, a public gathering, assuming you haven't made a final decision! There would be negative public relations to deal with. The EA doesn't do this (any cost comparisons). A business would have to clearly lay this out.*

**Response:** BPA has prepared this environmental assessment to determine if the action, as proposed, would create any significant environmental impacts. With mitigation, the proposed action was found to create no significant environmental impacts; therefore, BPA is issuing a Final EA and Finding of NO Significant Impact (FONSI). The agency can select the action, as proposed, or select the No Action Alternative. Whatever decision BPA makes on the proposed action, it will be documented and published in a document known as a Decision Record, a copy of which would soon be available, following the completion of the environmental review.

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**Comment 3.2-40:** *I'm sure BPA is concerned about budget, but landowners are concerned about how the (proposed) project impacts them.*

**Response:** BPA is concerned about the costs of the proposed action, as well as how the human environment would be impacted. BPA prepared this environmental assessment to identify impacts to the human environment, and to determine if the proposed action would create any significant or potentially significant impacts on the human environment. With mitigation, none were found, and BPA has prepared a Finding of No Significant Impact.

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**Comment 3.2-41:** *Where is the animal crossing located?*

**Response:** The Preliminary EA did not identify this landmark on any of the figures. Please see Figure 2 in this document for the location of the animal crossing under the east and west bound lanes of I-90.

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**Comment 3.2-42:** *What would be the length of the access road on the Thompson's property?*

**Response:** BPA proposes to construct an access road on the Thompson property. The access road would be approximately 460 m (1500 feet) long.

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**Comment 3.2-43:** *Question the accuracy of the photomap and other maps which seemed to show the proposed transmission line alignment on Quadrant property (Snoqualmie Ridge Business Park).*

**Response:** BPA has prepared a blow-up of the detail of the proposed right-of-way along S.E. 356<sup>th</sup> Avenue (see Figure 7). The figure shows the proposed right-of-way in relation to the existing 500-kV transmission line, the section line and the buffer area on Quadrant property. The figure also illustrates the alignment of the proposed transmission line right-of-way at the point the line jogs to the west to be located on Weyerhaeuser property in Section 35.

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**Comment 3.2-44:** *What are the chances of you arranging the poles so we don't have one directly in front of our gate. A few feet to the north and you are on developer's property (and potentially future city property since the property north of us could be subject to annexation in the future). Our property is protected and may not be annexed. We see our life style being threatened. Please let me know if there is anything you can do about the gate.*

**Response:** BPA would work with the landowners whose property would be affected. With the exception of the need to place wood pole structures at specific locations at angle points, BPA would be able to move structure locations along the proposed alignment to mitigate land use impacts to the affected property owners.

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**Comment 3.2-45.** *SE 96<sup>th</sup> Way can't be closed or blocked at any time. It's the only way in and out of the Gordon property.*

**Response:** The contractor would be made aware of the households who use SE 96th Way as their only ingress and egress to their property in the terms and conditions of the contract, and also during the preconstruction briefing with BPA personnel, including the construction manager, construction inspector and land representative. The contractor would have no need to close or block SE 96th Way at any time.

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**Comment 3.2-46:** *The EA should clarify the difference between the original easements compared to the new easements (activities that can be conducted).*

**Response:** Although the original easements are not identical, they include the following rights: the perpetual right to enter and erect, maintain, repair, rebuild, operate, and patrol one line of electric power transmission structures and appurtenant signal lines, including the right to erect such poles, transmission structures, wires, cables, and appurtenances as necessary, in over, upon, and across the right-of-way. There are a few exceptions; one easement has the right for one or more lines (rather than being limited to one line of structures). Two easements contain slightly different wording as follows: the right to construct, maintain, repair, rebuild, operate, and patrol one line of electric power transmission structures with conductor and necessary appurtenances over and upon the right-of-way.

All the original easements have the present and future right to clear the right-of-way and keep the same clear of brush, timber, structures and fire hazards, provided fire hazards shall not be interpreted to include any growing crops other than trees. There are a few exceptions: (1) where an easement provides language that fire hazards shall not be interpreted to include any growing crops other than trees over 4.5 m (15 feet) high; (2) where an easement provides slightly different language as follows: the right to clear the right-of-way and keep the same clear of brush, timber, structures, and fire hazards, provided that the words "fire hazards" shall not include annual agricultural crops, and to dispose of such brush, timber, and structures in such manner as shall not create a fire hazard; and (3) where easements have no future danger tree rights; and/or easements which have future danger tree rights within restricted cutting areas; compensation for future danger trees within the described strips of land was included in the consideration paid for the right-of-way.

Most of the original easement documents were limited to the right to construct one line of structures. BPA's new standard easement documents include the rights for one or more electric circuits of any voltage and any communication lines or equipment and appurtenances thereto.

BPA has sited a portion of the new transmission line right-of-way along the northern portion of S.E. 356th within the existing 46-m (150-foot) wide BPA right-of-way, before jogging to the west at the point where SE 356<sup>th</sup> Avenue also jogs to the west. Since the new structures would be located within the boundaries of the original easements that were limited to one line of structures, BPA would need to secure rights for the additional burden across these easements.

In regard to danger trees, the new easements are similar to the original easements except that the new easements would not limit future danger trees to restricted cutting areas. Compensation for present and future danger trees would be included in the consideration paid for the right-of-way.

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**Comment 3.2-47:** *A strip of trees left on SE 356<sup>th</sup> Avenue (where line veers west of existing right-of-way) will be subject to wind throw. This wasn't addressed in the EA.*

**Response:** BPA is moving the line to the west in this location to accommodate one of the landowner's suggestion to retain the strip of vegetation between SE 356<sup>th</sup> Avenue and the existing BPA right-of-way. BPA has located the line along the west side of SE 356<sup>th</sup> Avenue, in part to comply with this request. BPA would not assume liability for the trees east of SE 356<sup>th</sup> (in this location) since they would be off the proposed right-of-way, on private property.

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**Comment 3.2-48:** *I want stumps removed from the right of way if the project goes through.*

**Response:** Comment noted. BPA would consider removing the stumps of trees that would be removed from the right-of-way, should BPA decide to build the project.

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**Comment 3.2-49:** *There is an original road maintenance agreement on SE 356<sup>th</sup> Avenue.*

**Response:** Comment noted.

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## GEOLOGY AND SOILS (CHAPTER 3)

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**Comment 3.3-1:** *Geologic hazard areas. Geologic hazard areas include erosion, seismic, steep slope and landslide hazard areas. Utilities may generally be allowed in geologic hazard areas, if, based upon a review of special studies, it is determined that the proposed construction will not subject the area to risk of landscape or erosion, or that risk from seismically induced settlement is minimized or eliminated. The geotechnical evaluation referenced in the EA should specifically address impacts of clearing and tree removal on steep slope hazard areas (greater than 40 percent) and landslide hazard areas, as it relates to long-term slope stability.*

**Response:** Geologic hazard areas were addressed in the Engineering Geologic Recognizance (report) provided by Golder Associates. This study identified potential unstable areas along the power line alignment. Upon field review, these sites were determined to be free of active landslides and suitable for development, provided that best management practices (BMPs) be employed. Proposed BMPs include but are not limited to: minimizing grading and vegetation clearing, prompt revegetation of disturbed areas, limiting construction to the dry season (April through mid-October), and implementation of appropriate temporary and permanent measures to control erosion and run-off. In addition, the report recommended that a geotechnical engineer be retained to review the grading plans on cuts or fills greater than three feet high. BPA would implement these BMPs during project design and construction.

Although BPA's proposed alignment does not specifically follow the same alignment that was proposed by Puget, the transmission line generally follows the same alignment between the tap point and the proposed substation site.

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**Comment 3.3-2:** *The EA discusses construction of new access roads which would collect and concentrate surface water, and/or add new impervious surface areas. The proposed route is within or adjacent to numerous sensitive areas, the impervious surface thresholds likely would be exceeded, and collection and concentration of surface water may occur from road construction, therefore, an engineered drainage analysis should be prepared for this proposal addressing the eight core requirements in the King County Surface Water Design Manual.*

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**Response:** BPA would prepare an engineered drainage analysis for new access roads that would address the eight core requirements contained in the King County Surface Water Design Manual, and submit the drainage analysis to the King County Department of Development Services for their review and approval prior to the onset of construction activities.

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**Comment 3.3-3:** *Geology and Soils and Water Quality. Only short-term increases in erosion and runoff rates are acknowledged.*

**Response:** The commentor is correct. BPA anticipates no discharge of pollutants to surface waters in measurable quantities as a result of the proposed action; therefore, no long-term impacts are anticipated.

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**Comment 3.3-4:** *Erosion concern where BPA will remove trees on Thompson property, adjacent to SE 96<sup>th</sup> Way (unstable slopes).*

**Response:** BPA is also concerned about the erosion potential of this area, consequently, the clearing contract would state that it is important for the clearing contractor to not disturb the vegetation on the steep slope in this location. BPA appreciates the commentor's suggestions that this area needs to be protected.

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## WATER QUALITY (CHAPTER 3)

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**Comment 3.4-1:** *The increased runoff effect would be multiplied in that additional power supply will enable further development and clearing of perhaps 1600 acres (or more?) with an end result of much greater stormwater runoff. Increased runoff increases erosion, water pollution, flooding, and degrades fish habitat. These effects would be significant public loss with real economic costs.*

**Response:** The Preliminary EA looked at the cumulative impacts of the proposed action when added to past, present and reasonably foreseeable future actions, with respect to the impacts on water quality and sediment loading of local streams. The EA stated that "Mitigation measures proposed for this project would reduce the chance of large amounts of sediment from entering surface waters. It is unlikely, therefore that the proposed action, when added to past actions, current proposals, and future developments would measurably contribute to degradation of the area's water quality."

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**Comment: 3.4-2:** *The proposed route will cross several wetlands and streams requiring clearing and tree removal within the sensitive areas. The EA did not*

*discuss the amount of clearing proposed within these sensitive areas, nor proposed mitigation to replace the functional loss of tree and vegetation cover within stream and wetland areas.*

**Response:** Tree removal within stream and wetland areas would have minimal impact on the values and functions provided by these aquatic resources. Since the proposed transmission line would cross waters at nearly right angles and would be adjacent to existing rights-of-way, clearing would be kept to a minimum and would not fragment existing vegetation cover types. Only trees that pose a hazard to power line operation and maintenance would be removed. In most cases, low-growing streamside and wetland vegetation and shade-providing shrubs would not be removed. Disturbed areas would be restored and revegetated following construction with suitable vegetation. In addition, since the quantity of trees to be removed at stream and wetland crossings is minimal, the proposed project would not be expected to have a detrimental effect on water temperatures. Although impacts are expected to be minimal, any mitigation of adverse impacts would be conducted in accordance with conditions determined with the appropriate jurisdictional agencies.

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**Comment 3.4-3:** *Estimates of storm water runoff rates for roads and cleared land are 2 to 15 times that which occurs on forested land (up to 25 times if the land is paved) (references: Dinicola, Hartley, also King County Forest Stewardship course content, and Executive Ron Sims, remarks at Private Forest Summit 2000, March 29, 2000). For the acreage permanently cleared of forest for the proposed power line, a long-term increase in storm water runoff would occur. Dinicola, R. S., 1990. Characterization and Simulation of Rainfall-Runoff relations for headwaters Basins in western King and Snohomish Counties, Washington. USGS Water resources Investigations Report 89-4052, 52pp. And Hartley, D and J Burkey, 1997. Impact of timber harvest on stream flow in a low elevation Watershed. Presented at the third Annual WA-DNR Watershed Analysis Stampede, October 28-30, Pack Forest, Eatonville, WA.*

**Response:** BPA acknowledges that more stormwater runoff would result for roads and other cleared areas than from forested areas. As indicated in response to Comment 3.3-2, BPA would minimize impacts to water quality by preparing an engineered drainage analysis for new access roads that would address the eight core requirements contained in the King County Surface Water Design Manual, and submit the drainage analysis to the King County Department of Development Services for their review and approval prior to the onset of construction activities.

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**Comment 3.4-4:** *How will this (proposed project) affect Cold Creek? Will sediment enter the creek?*

**Response:** BPA would take measures to ensure that sediments would not reach any surface waters in measurable quantities, including Coal Creek. Therefore, no long-term impacts to Coal Creek are anticipated.

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**Comment 3.4-5:** *Concern for what we would do to Cold Creek?*

**Response:** Please see Comment 3.4-4.

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**Comment 3.4-6:** Surface Water Management/Water Quality. *All development proposals that would add more than 5,000 square feet of new impervious surface would construct or modify a drainage system that collects or concentrates surface and stormwater runoff, or that contains, or is adjacent to, a floodplain, stream, lake wetland, or other sensitive area defined in KCC 21A.24 are required to satisfy the eight core requirements outlined in the King County Storm Water Design Manual (KCC 9.04.040). The proposed route crosses or is adjacent to several of these streams and wetlands.*

**Response:** BPA would comply with this King County requirement, prior to the onset of construction activities. See Comment 4.3-3.

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**Comment 3.4-7:** *The EA discusses construction of new access roads which likely would collect and concentrate surface water, and/or, any new impervious surface areas. The proposed route is within or adjacent to numerous sensitive areas, the impervious surface area threshold likely would be exceeded, and collection and concentration of surface water may occur from road construction, therefore, an engineered drainage analysis should be prepared for this proposal addressing the eight core requirements in the King County Surface Water Design Manual.*

**Response:** BPA would prepare an engineered drainage analysis and address the eight core requirements contained in the King County Surface Water Design Manual, prior to the onset of any construction activities. See Comment 3.4-3.

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**Comment 3.4-8:** *Geology and Soils and Water Quality: Only short-term increases in erosion and runoff rates are acknowledged.*

**Response:** This is correct. BPA anticipates no discharge of pollutants to surface waters in measurable quantities as a result of the proposed action, therefore, no long-term impacts are anticipated.

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**Comment 3.4-9:** *We use well water so we don't want any herbicides used. This is our drinking water.*

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**Response:** BPA uses herbicides to control tall-growing vegetation on its rights-of-way in what is known as an integrated vegetative management program. Prior to using any herbicides, BPA would contact affected landowners to find out if they would have any concerns to herbicide use on or near their properties. BPA's policy on herbicide use in the vicinity of domestic/public drinking water wells is that a 50-m (164-foot) radius be implemented for any herbicide having a ground/surface water advisory, or 15-m (50-ft.) radius for any other herbicide.

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**Comment 3.4-10:** *If you treat stumps, won't the herbicide leach into the drinking water?*

**Response:** BPA uses herbicides to treat cut stumps of deciduous trees to prevent resprouting, particularly cut stumps of big leaf maple. The herbicides are selectively applied to cut stumps, in limited quantities, by licensed applicators using a backpack and a hand-held applicator according to label instructions. This method of selectively applying herbicides prevents any herbicides from reaching groundwater. See also Comment 3.4-9.

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### VEGETATION (CHAPTER 3)

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**Comment 3.5-1:** *By enabling further development, the new power line would contribute to an even greater loss of forest vegetation.*

**Response:** The proposed project is needed to ensure an adequate supply of electric power for Tanner's existing customers and to Tanner and Puget's future customers in the project area. Since new development on raw land may displace trees and other vegetation commonly found in the forest habitat, it could be said that the new power line would likely contribute to the loss of forest vegetation in the area in the future. However, since each of the affected jurisdictions (City of Snoqualmie, City of North Bend and unincorporated King County) has an adopted process for handling new development requests, mitigation measures would likely be placed on any proposed developments to minimize environmental affects, including those that affect forest resources.

While BPA is generally not subject to local development approvals on the proposed action, the transmission line and substation have been designed to minimize impacts on the human environment, to the maximum extent practicable. BPA has sited the facility to take advantage of existing rights-of-way (both utility easements as well as public road rights-of-way) to minimize the amount of clearing necessary. In addition, BPA is providing for the maximum amount of vegetation to be retained while maintaining the necessary electrical clearances as required by the National Electric Safety Code, should it choose to go forward with the project. Also, BPA is designing

the facility to accommodate other utilities should they acquire their own rights from the underlying landowners, an example of one-utility planning. As was stated in the Preliminary EA (Section 3.2.3), by implementing the one-utility planning concept with more than one utility uses a single set of utility poles, the amount of vegetation that would need to be taken to accommodate utility lines would be minimized.

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**Comment 3.5-2:** *Wants right-of-way replanted after clearing.*

**Response:** BPA would reseed disturbed areas following the completion of construction activities. BPA discourages the growth of tall-growing vegetation on its rights-of-way and encourages the growth of low-growing vegetation. BPA would also replant critical areas with low growing and tall growing vegetation following the completion of construction activities.

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**Comment 3.5-3:** *Wants to see plan of how we will revegetate the area.*

**Response:** BPA anticipates retaining the services of a plant specialist/arborist in addition to using Puget's publication on selecting the right species to grow near transmission facilities. BPA also anticipates preparing planting plans for those areas where mitigation would be needed, such as within the buffer area along SE 356<sup>th</sup> Avenue, within the I-90 right-of-way, along portions of North Bend Way, and in the vicinity of North Bend Way and Alm Way near and within the City of North Bend. BPA would also reseed all disturbed areas following the completion of construction activities.

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**Comment 3.5-4:** *Wants vegetation mitigation.*

**Response:** See Comments 3.5-2 and 3-5-3.

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**Comment 3.5-5:** *Removing danger trees only where necessary is a meaningless statement. No commitment provides that 100 feet won't be cleared of all tall trees, including conifers.*

**Response:** BPA is attempting to save as many trees as possible adjacent to the proposed right-of-way. BPA's forester is aware of the sensitivity and the emotions associated with the need to remove vegetation to construct and operate the line in the project area.

While yesterday's clearing policy took out every danger tree that could hit a specific line with the addition of 15 years of growth, today's clearing policy is tempered with things we have learned from our maintenance criteria that incorporates local knowledge into our decisionmaking. Today we take into consideration local wind

patterns, intensity and frequency of storms, and whether they are usually accompanied by ice, snow, rain, or high winds. We also look at what types of trees have blown down in the area in the past, and their direction of fall. Additionally, we look at soil conditions, the existence of any root rot problems as well as other site characteristics. We have become very knowledgeable about understanding the growth characteristics and behavior patterns of the tree species found in our service area. For example, we understand that Western hemlock are shallow rooted, that black cottonwood tends to be brittle and breaks easily, that red alder and big leaf maple also break easily in heavy wet snow and during ice storms. We understand that lodgepole pine bends under heavy snow or ice loadings, and any tree with a defect or that leans toward a transmission line would be considered a potential problem tree.

BPA would modify its clearing policy both within the proposed right-of-way as well as its policy with respect to danger trees off of the right-way on this proposed project. In this way, BPA would assume much more risk for tree-caused problems because more trees that could possibly hit the line if they fell would be left. While normally the entire right-of-way would be cleared of vegetation, BPA is putting into the clearing specifications that only the wire zone, i.e., the area over which the conductor would swing, would be cleared, which would preserve some of the lower growing vegetation between the wire zone area and the edge of the right-of-way. In steep slope areas, such as the one along 96th Way, the forester is recommending that none of the salmonberry along the steep slope on the Thompson property be taken. Similar clearing criteria would be spelled out for other steep slopes or sensitive areas such as those along the wetlands associated with Kimball Creek, within the North Bend Way right-of-way.

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**Comment 3.5-6:** *The environmental impact of removal of danger trees can't be determined until the danger trees have been positively identified; however, the verbal identification of such trees on our property by Kathy Stephenson (BPA forester), suggests that many tall trees, including conifers, within our property would be condemned (some of those trees in sensitive areas, in wetlands and on steep slopes). The EA doesn't address the negative impact of removing these trees (increased visual and noise pollution, loss of many public benefits that trees provide) nor does it include the removal of these trees in the estimate of cleared land. Mitigation with replanting of native shrubs and low or slow growing conifers would be necessary, but is not offered.*

**Response:** Geologic hazard areas were addressed in the Engineering Geologic Reconnaissance report provided by Golder and Associates, entitled Tanner Tap Project, Engineering Geologic Reconnaissance, North Bend, Washington, March 26, 1998. This study identified potential unstable areas along the power line alignment. Upon field review, these sites were determined to be free of active landslides and suitable for development, provided that best management practices be employed. Proposed BMPs include but are not limited to: Minimizing grading and vegetation clearing, prompt revegetation of disturbed areas, limiting construction to the dry

season (April through mid-October), and implementation of appropriate temporary and permanent measures to control erosion and run-off.

With respect to any "noise pollution" caused by the proposed project, BPA retained the services of an acoustical engineering firm, MFG of Lynnwood, Washington, to undertake an environmental noise analysis of the proposed action of building the transmission line and substation. The analysis looked at the impacts of clearing vegetation, including danger trees, between noise sensitive properties and major arterial road, I-90 and North Bend Way. The reports' findings were that the proposed substation would meet both the City of North Bend's noise ordinance as well as King County's, and the increase in sound levels at all potentially affected residences due to the removal of trees and shrubs would not likely be discernable. Therefore, the proposed project should not result in any significant noise impacts.

With respect to including the danger trees in the amount of acres that would need to be cleared for the proposed project, BPA feels that such a figure would be misleading in that only individual trees are identified as danger trees (see also Comments 3.5-5 and 3.5.7).

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**Comment 3.5-7:** *Whether or not the sixteen acres estimated to be cleared includes the land where danger trees would be removed is not specified in the EA. If it does not, the effective area of clearing is greater than 16 acres. Mitigation by replanting with native shrubs and low or slow growing conifers where possible would reduce, but not eliminate this impact.*

**Response:** Danger trees are not included in the 6.5 hectares (16 acres) that BPA has identified that would need to be cleared for the proposed project. Individual danger trees would be in addition to the 6.5 hectares (16 acres). BPA is aware that it cannot mitigate all impacts associated with development projects, only those that would reduce potentially significant impacts below the level of significance.

BPA proposes to provide low-growing and tall-growing vegetation in certain areas to mitigate specific impacts where those impacts have been identified, i.e., certain properties that would have the screening removed between arterial roadways and their residences such as some properties along North Bend Way, within the I-90 right-of-way, at the request of the Greenway Trust and the Washington State Department of Transportation, at the entrance to North Bend where vegetation would be removed, and within the 50-foot buffer area in the City of Snoqualmie.

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**Comment 3.5-8:** *Vegetation: The tall growing conifers along I-90 within the proposed 50 foot easement for a new powerline include a number of trees with diameter (dbh) greater than 36 inches. At least one Douglas fir tree in the proposed easement adjacent to our property is more than 41 inches dbh. Also, removal of danger trees may not be included in the estimate of vegetation loss, and if not, would*

*represent a significant additional loss. Mature trees provide many economic as well as aesthetic benefit. They filter chemical pollutants from air, fix carbon and produce oxygen. They reduce surface water runoff, allowing water to filter through soil or be returned to the atmosphere. These benefits are especially needed near high pollution areas such as roadways. Trees also moderate temperature, providing shade in summer to cool the ground, and provide wildlife habitat. Mitigation from these losses should be provided if the project proceeds.*

**Response:** BPA is aware of the public benefits that trees provide, and the difficulty proposed transmission projects face balancing conflicting public benefits. This proposed project would provide an adequate power supply, also a public benefit, through a reliable delivery system to meet Tanner's present power needs and Tanner and Puget's future power needs in the North Bend area. BPA proposes to provide vegetation in certain areas where trees would need to be removed. See Comments 3.5-5 and 3.5-7.

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**Comment 3.5-9:** *Present and future implications of right-of-way on existing 150-foot wide right-of-way plus new right-of-way and the loss of vegetation, including danger trees, is the main concern.*

**Response:** BPA is locating the line partially on the existing 45-m (150-foot) wide right-of-way, along the existing private roads, and within the city, county and state rights-of way so as to minimize the amount of clearing that would be necessary to construct, operate and maintain the line, including danger trees.

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**Comment 3.5-10:** *EA wasn't clear about compensation for danger trees.*

**Response:** Where BPA would only acquire danger trees, we would only be acquiring a one-time cutting right. These trees would then belong to BPA to sell, give to the contractor, or give to the landowner, whatever BPA decides to do. BPA would pay fair market price (stumpage value, as recognized by the industry) to the landowner for any merchantable trees removed. On properties where BPA would be acquiring easement rights, compensation for nonmerchantable, tall-growing vegetation that would need to be cut would be included in the land value.

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**Comment 3.5-11:** *Replant area between North Bend Way and Alm Way with 2-inch caliper trees.*

**Response:** BPA would revegetate this area with vegetation that would not interfere with the safe operation of the transmission line in this location, should the transmission line be constructed. BPA would consult with Puget's publication on selecting the right species that would be compatible with transmission lines, and also consult with the City of North Bend, the City of Snoqualmie and the Snoqualmie

Valley Railroad on the acceptability of the species, location and size of the vegetation to be planted, prior to installing any vegetation in this area.

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**Comment 3.5-12:** *Consider water truck for plant survival first few years after planting. Possible City of North Bend could volunteer water truck (Tanner truck, city water?).*

**Response:** BPA appreciates the suggestion. Maintenance of any vegetation planted in the project areas would be the responsibility of the contractor until such vegetation would become established, normally one year.

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**Comment 3.5-13:** *Wants logs on ground moved up to the house so they can use them.*

**Response:** BPA would consider complying with this request, should the project be implemented.

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**Comment 3.5-14:** *We can mark trees on the east side of SE 356<sup>th</sup> Avenue.*

**Response:** BPA appreciates the cooperation of the landowner.

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**Comment 3.5-15:** *Wants vegetation planted back in easement area.*

**Response:** BPA would reseed all disturbed areas following the cessation of construction activities. The purpose of the reseeding effort would be to prevent erosion and the proliferation of noxious weeds, help prevent the establishment of tall-growing vegetation within the right-of-way, and reduce visual impacts associated with earth moving activities.

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**Comment 3.5-16:** *Gave permission to mark trees east of the road.*

**Response:** BPA appreciates the cooperation of the landowner in being able to identify what trees would likely need to be taken if the project is implemented.

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**Comment 3.5-17:** *Landowner doesn't want hemlock removed; however, doesn't object to removal of cottonwoods.*

**Response:** BPA would try to save the hemlock if it would be outside of the proposed right-of-way, and would not be perceived to be a threat to the safe and continued operation of the line. If not, it would need to be removed as a "danger tree." See also Comment 3.5-5.

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**Comment 3.5-18:** *Landowner wants certain trees topped rather than felled. Understand the hemlocks growing out of stumps will need to be cut.*

**Response:** BPA has limited resources to keep tall-growing vegetation out of the 24,000 km (15,000 circuit miles) of transmission lines that it owns. The decreasing budget does not provide enough resources to top or to trim trees instead of removing them associated with BPA rights-of-way. BPA does, however, allow landowners to keep their tall-growing vegetation out of BPA power lines, if the landowner would assume full responsibility for any disruption to service should an outage or fire result from a flashover caused by vegetation being in violation of the minimum clearances identified.

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**Comment 3.5-19:** *Landowner concerned that they and neighbors fought so hard to get the buffer and that we will be taking part of it out.*

**Response:** Please see Comment 3.8.2.

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**Comment 3.5-20:** *After we take out the trees, they will be able to see buildings on Quadrant property. They don't think the Business Park is a good neighbor because of the noise from back-up beepers, other noises and light.*

**Response:** Please see Comments 3.8-2 and 3.8-3.

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**Comment 3.5-21:** *Landowner would never want to see a tree cut.*

**Response:** Comment noted. Please see Comment 3.5-5.

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**Comment 3.5-22:** *Section 3.5.4 states that mitigation actions specify that "the disturbed areas (would be revegetated) with low-growing vegetation to guard against noxious weeds, prevent erosion, and to preserve visual quality." Instead of using the term "low-growing," mitigation standard should stipulate replacement vegetation to the maximum height feasible in relation to the power structures and maintenance road. That would be real screening and real mitigation.*

**Response:** Comment noted. BPA has adopted a policy of encouraging the growth of low-growing vegetation on its rights-of-way to keep tall-growing vegetation out of the conductors. This policy has been adopted so as to maximize the use of limited resources and to preserve the environment to the maximum extent possible. BPA has a limited budget to keep vegetation out of 15,000 circuit miles of transmission lines

under its control. And the fewer times BPA needs to clear vegetation from its rights-of-way, the less intrusion on the environment.

With respect to the recommended change, please see the third mitigation measure in Section 3.8.4 (Visual Section) which states that "a plant specialist would assist with identifying the appropriate plant species to reduce the visual impacts to the residents, Snoqualmie Valley Railroad passengers, and I-90 travelers resulting from removal of tall growing vegetation. BPA would consult with the Greenway Trust before undertaking any plantings within the I-90 right-of-way."

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## WETLANDS/FLOODPLAINS (CHAPTER 3)

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**Comment 3.6-1:** *D Creek has a legally mandated buffer. What are we going to do about that?*

**Response:** D Creek is considered a Class 2 Stream in the City of Snoqualmie and in unincorporated King County. Local regulations have established a 50-foot buffer adjacent to this intermittent stream. Since sensitive areas are difficult to avoid with linear facilities, such as transmission lines, BPA would minimize, to the maximum extent possible, any impacts to wetlands, including D Creek, and adjacent buffer areas.

BPA would span both the wetland and buffer area in this location, and would minimize any clearing that would take place in the wetland and buffer area. Any vegetation that would need to be removed would be left in the sensitive area as wildlife habitat. Should any access roads be constructed in wetlands at this location or elsewhere associated with this proposed project, BPA would acquire the necessary permits through the appropriate permitting agency, which in this case would be the Army Corps of Engineers. In addition, BPA would require that the contractor prepare a sensitive area site plan prior to initiating any construction activities in sensitive areas, including wetland buffer areas.

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**Comment 3.6-2:** *Wetland/streams. The proposed route will cross several wetland and stream areas requiring clearing and tree removal within the sensitive area and/or buffer. The EA does not discuss the amount of clearing proposed within these sensitive areas, nor proposed mitigation to replace the functional loss of tree and vegetation cover within stream and wetland areas.*

**Response:** Tree removal within stream and wetland areas would have minimal impact on the value and functions provided by these aquatic resources. Since the proposed transmission line would cross waters at nearly right angles and would be adjacent to existing right-of-way over most of the route, clearing would be kept to a minimum and would not fragment existing vegetation cover types. Only trees, which

pose a hazard to the proposed power line construction, operation, and maintenance would be removed. In most cases, low-growing streamside and wetland vegetation and shade-providing shrubs would not be removed. Disturbed areas would be restored and revegetated following construction activities with suitable vegetation. In addition, since the quantity of trees that would be removed at stream and wetland crossings is minimal, the proposed project is not expected to have a detrimental effect on water temperatures. Although impacts are expected to be minimal, any mitigation of adverse impacts would be conducted in accordance with conditions determined appropriate with the jurisdictional agencies involved.

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**Comment 3.6-3:** *What does BPA do about wetlands?*

**Response:** BPA's first priority is avoidance, i.e., locating transmission facilities on uplands. Where wetlands could not be avoided, BPA attempts to span them where practical (minimization). If they could not be spanned, any disturbances to these sensitive areas would be mitigated (e.g., installing soil liners and replacing topsoil removed during construction activities, etc.). Specific mitigation would be identified by the permitting authority, the Army Corps of Engineers.

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**Comment 3.6-4:** *100-foot buffer on either side of stream where possible. (Alm Way-North Bend Way).*

**Response:** The City of North Bend has established a 30-m (100-foot) buffer on either side of Gardiner Creek within the City of North Bend. Due to the channel of the creek between North Bend Way and Alm Way, BPA would not be able to site the wood poles outside of the 30-m (100-foot) buffer area. Any vegetation removed from the buffer area would be left as wildlife habitat.

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**Comment 3.6-5:** *Mitigation in North Bend. Mostly evergreen and low-growing varieties, such as huckleberry, salal, etc.*

**Response:** BPA will leave snags where practical, and replant the area between the railroad and Gardiner Creek with low-growing evergreen varieties and other species such as huckleberries and salal as needed. See also Comment 3.5-11.

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**Comment 3.6-6:** *Minimize cutting vegetation around sensitive areas such as streams, wetlands, etc.*

**Response:** BPA would minimize the clearing that would be necessary for the entire project. Particular care would be taken for sensitive areas, such as within wetlands or wetland buffer areas. And any vegetation removed from wetlands and wetland buffer areas would be left as wildlife habitat.

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## FISH AND WILDLIFE (CHAPTER 3)

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**Comment 3.7-1:** *The upper Snoqualmie Valley has been included in the mapped area for bull trout listing by the USFWS. The City of North Bend is presently waiting for survey work to be conducted to confirm or deny the presence of the bull trout in the river and streams in the City, including Gardiner Creek.*

**Response:** BPA obtained information from the Washington Department of Fish and Wildlife (WDFW) that they have no information indicating that bull trout were ever above Snoqualmie Falls. Curt Kraemer, Supervisor of the WDFW's Mill Creek office told us on February 18, 2000, that there have been several recent habitat projects that have conducted monitoring studies using electro fishing techniques on the Southfork Snoqualmie River that found no bull trout. They are aware of continued plans for additional surveys by King County and others beginning this year (2000).

With regard to the results of any new surveys brought to the City of North Bend's attention, BPA would appreciate hearing from the City of North Bend if any bull trout were found.

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**Comment 3.7-2:** *Whether or not the claim that no endangered species are present is valid depends on how thorough surveys were from which this conclusion was drawn. I would like to have more information on this subject before commenting.*

**Response:** With respect to rare and endangered species investigation regarding fish, wildlife and plants, BPA obtained the information used to draw its conclusion of "no affect," from the Washington Department of Fish and Wildlife data bases for listed plants, fish and wildlife, and the U.S. Fish and Wildlife Service with respect to critical habitat of the Northern spotted owl and marbled murrelet. See also response to Comment 3.7-1.

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**Comment 3.7-3:** *Saw a black bear on the road two nights ago. This area has been a haven for the people and wildlife. Now the animals are confused because of all the development.*

**Response:** Wildlife habitat for bears and other wildlife in the proposed project area is undoubtedly affected by past and present development. However, Section 3.7.3 of the EA analyzed the cumulative impacts on the fish and wildlife resources in the project areas (including bear), and found that although habitat would be modified, the amount of habitat removed or converted would be too small to noticeably contribute to the local reductions of fish and wildlife populations within the project area.

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## VISUAL QUALITY (CHAPTER 3)

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**Comment 3.8-1:** *Concerned about visual impacts.*

**Response:** BPA is also concerned about the visual impacts of the proposed transmission line and related substation. To mitigate the visual impacts of the proposed line, BPA would be: (a) using darkened wood poles and nonspecular conductors; (b) adopting a relatively narrow 15 m (50-foot) wide right-of-way; (c) modifying the existing "danger tree policy" to take as few as possible; (d) and using a portion of an existing BPA right-of-way and adopting a one-utility planning principle of designing the transmission line to accommodate multiple utilities using BPA poles. In addition, BPA would be reseeding all disturbed areas immediately after construction, as well as providing low-growing and tall-growing vegetation, where needed.

Tanner Electric would also provide a landscaped berm around the north and east sides of its proposed substation in the City of North Bend.

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**Comment 3.8-2** *The EA is inadequate because it fails to address issues important to the residents of the area near SE 356<sup>th</sup> Avenue, which is the clearing issue. It is incomplete in that it does not adequately address the impacts of clearing along S.E. 356<sup>th</sup> Avenue that exposes the Snoqualmie Business Park to the residents east of the development. In addition, the EA does not discuss the three policies within the Comprehensive Plan that are violated i.e., Policy 2.B.1 "protect natural features and processes and generally sustain a high quality natural environment," Policy 2.B.4 "provide physical and or visual buffers such as open spaces which help separate incompatible uses...", and Policy 2.B.8 Promote the planting of trees on public and private land..."*

**Response:** In response to this comment, BPA has revisited the environmental consequences section of the Preliminary EA, and has added an additional mitigation measure to help mitigate the impacts clearing would have on the residents in this area. BPA would work with the landowner of the Business Park, the Quadrant Corporation, and the City of Snoqualmie in adding additional vegetation within the buffer strip that was intended to separate the Business Park from the adjacent residential properties.

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**Comment 3.8-3:** *The City of Snoqualmie is concerned that removal of danger trees in the 50-foot wide perimeter buffer along the east boundary of the Snoqualmie Ridge Business Park could significantly degrade the buffering function provided by existing large trees and diminish the experience of trail users. At a minimum, BPA should commit to planting trees and shrubs in the Snoqualmie Ridge Business Park buffer*

*and consider locating the new line within the eastern portion of the existing right-of-way where removal of danger trees would not impact the ongoing function of the required buffer and public open space area.*

**Response:** For construction, BPA would only be removing a limited number of "danger trees" within the existing 50-foot wide buffer, according to BPA's forester, Kathy Stephenson. However, additional trees may be removed if it is found that they would also threaten the security of the line in the future. Though removing these danger trees (likely hemlock) would not significantly degrade the buffering provided by the existing trees nor diminish the experience of trail users, removing these trees plus the clearing that would be required for the proposed right-of-way would contribute to the visual impacts of those property owners located near the business park. BPA would work with the landowner, Quadrant Corporation and the City of Snoqualmie, in adding additional vegetation to the buffer area to mitigate this impact.

With respect to consideration of locating the proposed transmission line on the east side of the existing BPA 45-m (150-foot) wide right-of-way, BPA had early in the process decided not to locate the line on the eastside of the existing BPA right-of-way to minimize the land use impacts to the residents who reside near the line.

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**Comment 3.8-4:** *Here is the sticking point for us, way back when hearings were underway on the Snoqualmie Ridge development and the business park directly west of us, the City of Snoqualmie ordered the fifty foot buffer to protect residents such as (us) from the effects (primarily visual) of the development. Had any of us known at the time that you were going to take (or attempt to take) the piece of property we have west of the road, as well as part of the buffer, we would have asked for, and the City probably would have granted, a wider buffer. The City would have granted a wider buffer or not allowed the horse trail to be a part of the buffer. And the City's intentions are not fulfilled because we are no longer protected.... Or maybe you think I am an overly sensitive viewer (page 28 of the EA). As you know, residents were so concerned about something like this happening, that we convinced a hearing examiner to ban BPA power lines from the buffer. The intent of this order is not fulfilled if you cut down danger trees in that buffer.*

**Response:** As a result of the need to remove danger trees from the buffer, some tall-growing vegetation (danger trees) may need to be removed from the buffer on an ongoing basis. To mitigate this impact, BPA would work with the Quadrant Corporation to add additional vegetation to the buffer area. This additional mitigation measure has been added to the Final EA, Section 3.8.4. See also Comments 3.8-2 and 3.8-3.

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**Comment 3.8-5:** *The EA speaks to the visual impact of new poles on our road, but it does not speak at all to the impact on us of the damage to our buffer. For us this is THE issue. In fact, I will make a deal with you. You can put up five poles...no ten*

*poles on our property to the west of 356<sup>th</sup>, but you do not cut down a single tree to do it. Deal?*

**Response:** BPA regrets the need to remove any trees on its rights-of-way or proposed rights-of-way, but understands that it must do so to ensure a safe and reliable power supply to its customers. BPA has a limited budget for right-of-way maintenance to keep tall-growing vegetation out of its power lines. By encouraging the growth of low-growing species and discouraging the growth of tall-growing species, BPA minimizes costs and environmental impacts associated with the need to revisit these areas. Also, please see the response to Comment 3.8-4.

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**Comment 3.8-6:** *Location of the proposed transmission line on or adjacent to Greenway Trust lands is reportedly incompatible with their mission, i.e., transmission lines are not considered scenic. We also do not consider the (power) lines to be a compatible neighbor to our property because of the loss of trees and other native vegetation that currently provide many benefits noted above, as well as the buffer between us and the freeway on ramp. We don't want to see it, hear it or breathe the fumes of the vehicles; their drivers don't want to see us. Locating the line somewhere else (or not at all) would serve both the Greenway Trust goals as well as our own. Arguing that putting the line on the north side of the freeway is compatible with the Trust, while the south side is not is inconsistent in both cases, the line would be visible to drivers.*

**Response:** The Preliminary EA (page 7) stated that one of the reasons against siting the line on the south side of I-90 was that the alignment would cross an undeveloped parcel that was in the process of being transferred to the Land for Public Trust (Greenway Trust), and that a transmission line would be at odds with protecting the parcel from development in perpetuity. The Greenway Trust is a non-profit organization, initiated by citizens, to create and permanently protect this multipurpose green corridor while accommodating growth and change. The organization is not anti-growth, only that it be accomplished in an environmentally acceptable manner within the 90-mile I-90 corridor.

BPA rejected locating the line south of the I-90 right-of-way due to a number of additional reasons besides impacting the parcel that would be acquired by the Greenway Trust. These included: crossing the freeway twice where no crossing would be necessary; crossing both the highway and the North Bend Way on-ramp, together with the relatively flat topography in this area, would require unusually tall structures to cross over these arterial roads; and the need to purchase additional land and construct a longer transmission line would increase both the construction costs for labor and materials and electrical line losses.

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**Comment 3.8-7** *Loss of vegetation between them and the freeway will cause increased noise and lights from the freeway.*

**Response:** The environmental noise analysis undertaken as a part of the environmental review indicated that no perceptible increase in noise would result from removal of the existing vegetation (for right-of-way and danger trees) to construct, operate and maintain the proposed transmission line (see Appendix B, Environmental Noise Analysis).

With respect to the concern that right-of-way clearing between the residents and the west bound travel lane of I-90 would cause vehicle headlamps to adversely affect these properties, this should not occur. While some vehicles, especially large trucks are occasionally visible, especially during the winter months and at night, visible light from headlamps should not increase markedly because the direction of the headlamps would be at a right angle to the viewer as these vehicles traveled westbound. The headlamps would be directed towards the flow of traffic, not onto the residential properties that lie adjacent to the freeway.

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**Comment 3.8-8:** *The buffer is the issue. There aren't very many trees, and we want to keep the few there are.*

**Response:** Comment noted. See Comments 3.8-1 and 3.8-2.

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**Comment 3.8-9:** *Mentioned the planting of shrubs and small trees in the right-of-way and replacing what gets cut from the buffer.*

**Response:** Please see Comments 3.5-2, 3.8-1 and 3.8-2.

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**Comment 3.8-10:** *Right now, between their house and the existing swamp is the buffer. When we take the buffer they will be looking at the new police station, the lights, and the building on Quadrant property.*

**Response:** Comment noted. Please see Comments 3.8-1 and 3.8-2.

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**Comment 3.8-11:** *The North Bend Way right-of-way between Exit 27 to Kimball Creek serves as one of the primary entrances to the City of Snoqualmie (in addition to the City of North Bend). Element 8 of the Snoqualmie Vicinity Comprehensive Plan addresses requirements for development/annexation of land within this portion of the City's urban growth area. Policies 8C.1.4 and 8C.2.4 require consideration of the scenic resources of these planning areas and the function they serve as an aesthetic backdrop and gateway of the City, and provides measures to protect scenic views. The existing character of this gateway corridor is established primarily by the undeveloped nature of the corridor, particularly with respect to the large evergreen trees adjacent the roadway. Clearing of a 50-foot swath adjacent to the roadway*

would significantly alter the appearance and feel of this important gateway to the city (Snoqualmie). Removal of additional danger trees would have further negative impacts on this gateway to the historic portion of Snoqualmie and Rattlesnake Ridge open space.

**Response:** BPA is proposing to site the proposed transmission line within the North Bend Way right-of-way between the I-90 right-of-way and SE Meadowbrook Way on the north side of the public right-of-way. BPA has selected the north side of North Bend Way to site the line so as to: (1) minimize the clearing that would be necessary to construct the line (clearing would be minimized since an existing distribution line and its associated clearing is already located on the north side of this right-of-way, in addition to the clearing that has already been undertaken for the roadway itself); (2) avoid the siting of an additional utility line on the south side of North Bend Way, when a utility line already exists on the north side of North Bend Way, and would likely remain there (see discussion under Section 2.3.1, Alternative Route Segments (Segment E, South side of North Bend Way Alternative); and (3) to conform to the King County Comprehensive Plan (Chapter 12 of the Energy and Telecommunications Section [ET-203]), which states that when new, expanded or upgraded transmission is required, use of existing corridors that have above-ground utilities should be evaluated first, and that King County should facilitate appropriate corridor sharing among different utility types and owners. BPA is designing the proposed facility to accommodate Puget's underbuild.

In addition, to protect the scenic qualities of North Bend Way to the best of our ability, BPA would be using a relatively narrow right-of-way (15 m [50 feet] wide), and would be limiting the number of danger trees that would need to be removed to the maximum extent possible. See also Comment 3.5-5.

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**Comment 3.8-12.** *City of North Bend. This is an area of high visual sensitivity. The City has taken active steps to protect the north side of North Bend Way from Alm Way east to Gardiner Creek and preserve the visual gateway into the City by acquiring the property as part of the Meadowbrook Farm open space area. The section of new transmission line running from east Alm Way to the proposed substation would require removal of many significant trees (per NBMC 18.18.040(M)) directly south of the City's Meadowbrook Farm property along North Bend Way. The City requests that the trees removed along the new section of transmission line running along North Bend Way from Alm Way east to the new substation be mitigated by replanting with compatible shrubs and low-growing trees that would re-establish the forested character of this visual gateway to North Bend. The City's request is consistent with the recommendation outlined on page 4 of the Cultural Resource Assessment found in Appendix A in the Preliminary EA.*

**Response:** BPA would mitigate the loss of vegetation in this area with low-growing vegetation compatible with transmission line rights-of-way. BPA would work with

the City of North Bend and the Snoqualmie Valley Railroad in identifying appropriate plant species that would be used as mitigation.

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**Comment 3.8-13:** *Visual Quality. A potential visual quality loss is acknowledged for S.E. 96<sup>th</sup> Way residents, but no mitigation is offered.*

**Response:** BPA has undertaken an environmental assessment on the proposed action to identify the impacts that would be created by the proposed action, and to determine their significance. BPA is not required to mitigate all impacts from a proposed action, only those that would reduce a significant impact or a potentially significant impact below the level of significance. Although the residents and guests of those who use 96<sup>th</sup> Way would experience an open canopy where, prior to the proposed development, a closed canopy over the private road was in place, this impact cannot be mitigated since tall-growing vegetation is not compatible with transmission lines. BPA would leave the salmonberry along the bank of the Thompson parcel. Since no significant or potentially significant impacts would be created by the limited amount of clearing that would be undertaken in this area, no mitigation would be required beyond that which would be paid to the affected landowners. See also Comment 3.3-4.

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**Comment 3.8-14:** *You say you're going to remove 1/2 the tree cover, yet you say we're not going to notice the transmission line?*

**Response:** Residents and guests traveling on SE 96<sup>th</sup> Way, a private road, would notice the transmission line on the Thompson property, along the south side of SE 96<sup>th</sup> Way. Trees border much of the road at the present time. The trees on the south side of the road would be removed to allow the line to be built and operated and maintained in a safe and reliable manner. Those travelling on SE 96<sup>th</sup> Way would lose the closed canopy that presently exists over the roadway over most of its length between the turnaround and the I-90 right-of-way. See also Comments 3.8-13 and 3.3-4.

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**Comment: 3.8-15:** *Leaving pavement on 96<sup>th</sup> Street onto 96<sup>th</sup> Way (Gordon driveway) main concern is trees removed on Thompson's property. Road is now tree covered and clearing will remove the aesthetic canopy over the road.*

**Response:** The clearing would remove the closed canopy over the road. See also Comments 3.8-13 and 3.8-14.

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**Comment 3.8-16:** *Concerned that you do everything possible to mitigate cutting of trees along North Bend Way and Alm Way - replanting with compatible species to reforest route, since it's a gateway into the City of North Bend, and a scenic route.*

**Response:** BPA would prepare a planting plan and review it with the City of North Bend and the Snoqualmie Valley Railroad prior to undertaking mitigation in this area.

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**Comment 3.8-17:** *Puget Power has a good guide for compatible plant species with regard to transmission line rights-of-way.*

**Response:** BPA appreciates the suggestion. We have requested a copy of the brochures from the utility, and they have sent us the information. We would use the information in developing project mitigation. Thank you.

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**Comment 3.8-18:** *Outside of the 50-foot right-of-way (or its equivalent) where danger trees would be removed, mitigate with trees compatible with the transmission line. Within the 50-foot right-of-way, use shrubs greater than 10 feet tall for mitigation (near Alm Way and North Bend Way).*

**Response:** Comment noted. As a matter of policy BPA encourages the growth of low-growing plant varieties within BPA rights-of-way, and discourages the growth of tall-growing varieties. BPA does not allow vegetation taller than 3 m (10 feet) to grow in the right-of-way.

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**Comment 3.8-19:** *You went to great expense to prepare visuals (photo simulations) along highway corridor, but did not prepare any simulations for SE 356<sup>th</sup> showing the right-of-way corridor there.*

**Response:** In response to this comment, BPA has prepared additional photo simulations for the project, specifically photo simulations for the proposed right-of-way in the vicinity of S. E. 356<sup>th</sup> Avenue. Please see Photo Pairs 1 and 2 within the Final EA.

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**Comment 3.8-20** *How will you protect the buffer?*

**Response:** BPA proposes to remove as few danger trees from the buffer as possible. See Comments 3.8-1 and 3.8-2.

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**Comment 3.8-21:** *We need a map or visual aid that shows the details of the visual impacts of the 50-foot swath of clearing on the I-90 right-of-way.*

**Response:** BPA has prepared photo simulations showing the proposed transmission line within the I-90 right-of-way (please see Photo Pairs 5 and 6). Prior to installing any vegetation in the I-90 right-of-way, BPA would prepare a planting plan that

would identify the species, number, size and location of trees and low growing shrubs that would be planted on the state right-of-way. BPA would also work with the Greenway Trust and the Washington Department of Transportation in preparing such a plan. BPA would attempt to reach concurrence with this agency and organization before planting any vegetation within the state right-of-way.

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**Comment 3.8-22:** *We also need to specify the type of vegetation we plan to use along The I-90 corridor, i.e., what species of evergreens, etc.?*

BPA would work with the Greenway Trust and the Washington State Department of Transportation in identifying the species and location of the low-growing and tall-growing vegetation that would be planted in the I-90 right-of-way, as mitigation for project impacts within the State right-of-way. See also the response to Comment 3.8-21.

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**Comment 3.8-23:** *The hearings for Snoqualmie Ridge were timed badly. If they had known during the process for acquiring the buffer that BPA would be acquiring, they would have asked the City for more width in the buffer. The landowners thought that, when Puget dropped the project, it had gone away. The City was good to them and worked with them for the buffer.*

**Response:** Comment noted. See also Comments 3.8-1 and 3.8-2.

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**Comment 3.8-24:** *I believe a full assessment of the visual impacts would stipulate that one of the most negative impacts in a forested corridor is the linear swath of cleared zone required for safe erection of the power line. And that these cleared paths are noticeable along the scenic highway because they head straight cross a landscape without regard to natural contours or land forms. To people travelling this National Scenic Byway to enjoy the natural scenery, they are a painful intrusion.*

*The commentor goes on to say that we should more fully describe the disruption to a scenic environment caused by these unnatural linear cleared paths and then to discuss methods for mitigating the "line across the landscape." In previous discussion (with BPA), we have talked about varying the path of the line as it crosses undeveloped land. Upon walking the proposed route with BPA staff, we were given verbal commitments to make several deviations from a straight line in the alignment of the power corridor, and would like to see that practice spelled out as mitigation and documented in a detailed map of the site, (within the I-90 right-of-way).*

**Response:** BPA recognizes that one of the most negative impacts in a forested area is a cleared right-of-way that runs perpendicular to the slope of the contour or an access road which travels along ridge lines. Usually these visual scars are very noticeable at higher elevations (from the viewer) and at great distances. This is not

the situation with the proposed project. The proposed right-of-way would run parallel to the motorist on I-90, and would be mostly screened from public view behind an existing row of trees that would remain (see photo simulations of proposed line within the I-90 right-of-way). Furthermore, the proposed transmission line would have four angle points within the I-90 right-of-way varying from three to seven degrees, i.e., four of the eight wood poles structures would be angle point structures. Additionally, BPA would seed the proposed access road following the completion of construction activities, and develop a planting plan to further mitigate the visual effects of the transmission line and right-of-way. BPA would work with the Greenway Trust in developing the planting plan, and plant the vegetation soon after the completion of construction activities.

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**Comment 3.8-25:** *During a tour of the site, BPA committed to have its forester carefully analyze large trees in the danger zone to maximize retention of every tree possible. The Greenway Trust understands that unless a tree was clearly a danger due to disease, age or specie it would be preserved. We hope this is the standard you are using and would like to see that stipulated explicitly in Section 3.5.4, where you say clearing would be minimized.*

**Response:** The Greenway Trust understanding is correct, BPA would make every effort to save the maximum number of trees adjacent to the right-of-way within the I-90 right-of-way. BPA is taking all cottonwoods, alder and hemlock that could hit the line as well as Douglas fir trees that are infected with root rot. Other species adjacent to the right-of-way would be side-trimmed, if possible. If not possible, they would need to be taken.

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**Comment 3.8-26:** *Regarding selections of plants to screen and revegetate the power line right-of-way, we would like to see specific recommendations for a preponderance of evergreen plant materials, particularly small trees. While some conifers may not be native to the site, it is more important that they give year-round screening for both the view from the highway as well as from the adjacent property owners who would be most affected when existing large trees are removed at the edge of their property. Furthermore, the goal of the mitigation should be to completely screen the 50-foot wide right-of-way from I-90 and surrounding properties.*

**Response:** Comment noted. BPA would work with the Greenway Trust in preparing the planting plan for the I-90 right-of-way at this location. BPA would seek the advice and concurrence of the Greenway Trust in the species selected, location and size of woody vegetation and low-growing brush that would be used to mitigate these impacts within the I-90 right-of-way.

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## SOCIOECONOMICS (CHAPTER 3)

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**Comment 3.9-1:** *The cumulative socioeconomic and environmental impacts of bringing more power to North Bend are not beneficial. To the extent that the power source for the additional power is hydroelectric, greater pressure to preserve dams that negatively impact endangered anadromous fish would result. Enabling further development of North Bend would contribute in the decline in the value of our local environmental resources, with increased loss of forest and all the losses that go with it. Redevelopment will also put more traffic on our roadways, creating more noise pollution, laying down more cadmium and zinc and other solid pollutants (heavy metals) to wash into our waterways. Producing more ozone, carbon monoxide, carbon dioxide (more global warming) and other air pollutants. The larger population will bring more crime to the area as well.*

**Response:** The environmental impacts of the redevelopment of the City of North Bend is outside the scope of this environmental document, as is the impact of dams on endangered fish runs. With respect to the increase in crime that normally follows an increase in population levels, increased traffic and the resulting increase in pollutants, such as heavy metals that would be deposited on roadways and affect air quality, these secondary affects are also outside of the scope of this environmental review. With regard to the loss of forests and of the forest habitat, please see Comment 3.5-1.

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**Comment 3.9-2:** *Higher taxes will be needed to build schools and infrastructure to support the larger population. If this is progress, it is progress toward a lower quality of life for most species currently in the area.*

**Response:** The need for additional schools and infrastructure improvements is outside of the scope of this environmental review.

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**Comment 3.9-3:** *Concern for value of easement rights. Current value will not be equitable in a few years.*

**Response:** When BPA acquires land rights for utility facilities, it does so by purchasing the rights from the underlying landowner(s). Should the landowners ever sell or otherwise transfer ownership of a property affected by utility facilities, the compensation sought would reflect any such restrictions that would run with the land. The presence of any encumbrances on private land, such as easements, are normally identified through the title search process that normally precedes changes in title.

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**Comment 3.9-4:** *Aware of an offer from a cell phone company of \$6,000 for two trees near their property.*

**Response:** Comment noted. BPA pays fair market value, as recognized by the industry, for timber needed to be removed from private land and the state right-of-way. King County is waiving its right to compensation for the timber and has requested instead that any timber removed from North Bend Way right-of-way in unincorporated King County be offered to the adjacent landowners at no cost.

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**Comment 3.9-5:** *Moved here for investment opportunity because of Snoqualmie Ridge. Property has almost doubled in value since 1996.*

**Response:** Comment noted.

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**Comment 3.9-6:** *Bought property seven years ago as an investment.*

**Response:** Comment noted.

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**Comment 3.9-7:** *The assessed value of their property is \$463,000 and all of the development in the area is driving them out because of increased property taxes. In 1994, they paid \$350,000. Their taxes have increased over twenty percent per year. When they asked for the King County Assessor's explanation of how they arrived at their assessed value, it was not explained to their satisfaction*

**Response:** Comment noted. Any past increase in real estate taxes within the project area is outside the scope of this environmental review.

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**Comment 3.9-8:** *There are no comparables for a log home that has a business park, golf course, and hundreds of new homes surrounding them.*

**Response:** Comment noted. The BPA appraiser has analyzed the market in the project area and has determined that there is sufficient market evidence to use the market approach to establish the fair market value for all land rights needed.

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**Comment 3.9-9:** *There is only one thing more important to them than their home, i.e., their children.*

**Response:** Comment noted.

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**Comment 3.9-10:** *Comparable analysis is in the eye of the beholder. They have a log home and it has a unique real estate market.*

**Response:** BPA acknowledges that log homes are in a unique real estate market. The costs to construct log homes typically exceed the costs of constructing traditional stick frame homes. See also response to Comment 3.9-8.

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**Comment 3.9-11:** *The existing buffer is a positive amenity, and it should be valued differently than across-the-fence values.*

**Response:** Comment noted.

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**Comment 3.9-12:** *Socioeconomics: The EA estimates a "short-term (0-2 percent) reduction in property value." This EA estimate is not valid for the proposed situation and likely underestimates the loss in property value.*

**Response:** The statement in the Preliminary EA on page 34, "The residential sales did, however, identify a small but negative impact from 0-2 percent for those properties adjacent to the transmission lines as opposed to those where no transmission lines were present," does not refer to short-term impacts. The EA goes on to explain that "some short-term adverse impacts on property values (and salability) might occur on an individual basis; however, these impacts would be highly variable, individualized, and unpredictable."

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**Comment 3.9-13:** *I requested a copy of the reports from which BPA reached this conclusion, but have not received it. Per conversation with BPA representatives at the June 5 Open House, the housing studied did not include comparable conditions to the proposed Tanner power line location, i.e., location in an otherwise forested buffer between the property or housing and busy roads or highways. Since many people consider the presence of power lines to be undesirable, and prefer more forested buffer between their homes or property and a busy, noisy road/highway, rather than less, the pool of potential buyers for an affected home is reduced. This corresponds, at least, to a longer average time to sell if not also a lower value. The longer time represents an economic loss, a real reduction in value*

**Response:** A copy of the International Right-of-way, September/October 1996 article entitled, "Transmission Line Impact on Residential Property Values" published by Cowger, et al. has been sent. The update to this study, which found similar results to the 1996 article, is not currently available, as it has only recently been submitted for publishing. As soon as it is published, likely in the next few months, we expect to receive permission from the publisher to release copies. We will forward a copy of this study to the commentor at that time.

You are correct that the BPA study of residential properties impacted by transmission lines may not be directly comparable to the conditions along the proposed transmission line. However, the study did include a diverse collection of properties ranging from tract homes in a subdivision to homes on acreage. BPA uses studies like this to provide an indication of long-term impacts of transmission lines on residential property values. At the time the Preliminary EA was written, BPA did not have the advantage of having completed appraisals of the specific properties impacted by the proposed transmission line. If a decision is made to construct the transmission line, we will use maps and legal descriptions of the impacted properties and complete appraisals for the specific properties. BPA's appraiser will use market data specific to the immediate area in determining the fair market value of the land rights needed and the impact of the proposed transmission line on the affected properties. In regard to the visual impacts to the forested buffer, please see responses to comments under 3.5.

BPA's studies considered how much longer properties with transmission lines remained on the market as compared to similar properties unaffected by transmission lines. Properties with transmission lines cited in the 1996 study were on the market an average of 8 days longer than the unaffected properties. In the Seattle area, the article indicated that the properties were on the market an average of 3 days longer than unaffected properties.

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**Comment 3.9-14:** *Property values are diminished by the presence of powerlines.*

**Response:** Construction of the proposed transmission line is not expected to cause long-term adverse effects to property values along the right-of-way or in the general project vicinity.

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**Comment: 3.9-15:** *Compared their area with upland estates.*

**Response:** Comment noted.

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## **CULTURAL RESOURCES (CHAPTER 3)**

(No comments received)

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## HEALTH AND SAFETY (CHAPTER 3)

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**Comment 3.11-1:** *Due to the uncertainty of electromagnetic field (EMF) concerns, the commentor would like BPA to drop the split alternative from further consideration.*

**Response:** We recognize the commentor's concerns and can offer no conclusion regarding health effects of EMF except to say that the evidence for risk of cancer and other health effects from EMF exposure has been weak and the probability that EMF exposure is a health hazard is small. Most of the scientific information doesn't establish that exposure to EMF fields at levels normally encountered in our living environments might cause adverse health effects, and the National Institute of Health Sciences (NIEHS) recently concluded (6/99) that the findings of their studies are insufficient to warrant aggressive regulatory action. For more information on EMF we suggest the reader access the following web site:  
<http://www.niehs.nih.gov/emfrapid/home.htm>

The comment referenced an extensive collection of information gathered from an Internet site entitled "Powerlinefacts.com." The power line task force, whose sole objective is to prevent the construction of a 115-kV transmission line in Minnesota, created this web site which helps support their case.

It is important to note that the Minnesota case differs from the proposed scenario in that the Minnesota line would be heavily loaded and there are numerous homes located 6-7.5 m (20-25 feet) from the proposed transmission line. Because of the proximity to homes, and high loading of the line, the Minnesota transmission line would result in EMF exposures of 50 mG (milligauss) at the edge of the right-of-way under peak load conditions. The proposed BPA line would be lightly loaded, and EMF levels would not exceed 3.5 mG at the southern edge of the right-of-way along Alm Way. The EMF levels would be significantly lower 46 m (150 feet) from the line; approximately 0.1 mG under peak load conditions (see Figure 13). Under normal conditions, EMF would even be lower, about half peak levels.

The proposed transmission line would have a minor contribution to EMF exposures in the homes along Alm Way because EMF drops off exponentially with distance, i.e., fairly rapidly. EMF from the proposed BPA line would be far less than what most people normally encounter in their homes (reference Zaffanella, 1993) where wiring configurations and household appliances dominate exposures, e.g., hair dryers (300 mG), electric blenders (70 mG), electric mixers (100 mG), vacuum cleaners (300 mG) and microwave ovens (200 mG). These are average EMF values measured six inches from the units (source: EMF in Your Environment, EPA, 1992). Normal background levels in a typical home where these electrical household appliances are commonly found are 0.5 mG (Source: Electric Powerlines, Questions and Answers on Research into Health Effects, "DOE/BPA -2081, 11/93).

Prior to adopting the so-called "Split Alternative," BPA had considered siting the proposed transmission line entirely down Alm Way, but subsequently moved the proposed alignment to continue down North Bend Way after crossing the railroad right-of-way for 245 m (800 feet) before moving over to Alm Way to avoid siting the line close to the Alm Way residents.

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### NOISE AND RADIO/TV INTERFERENCE (CHAPTER 3)

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**Comment 3.12-1:** *Concerned about increased noise (with the project).*

**Response:** There should be no noticeable increase in environmental noise as a result of the proposed action. Transmission lines of this voltage (115,000 volts) produce no audible noise; however, the proposed transformer at Tanner's proposed substation would produce an audible noise (hum). The noise emitted by the transformer would meet both the City of North Bend's and the King County's noise ordinances. With respect to vegetation removal between noise producing sources, such as I-90 and North Bend Way, the environmental noise analysis undertaken by MFG, Inc., and contained in Appendix B of this environmental document, indicates that although there would be a slight increase in decibel levels to receiving properties, the increase would be so small as to be imperceptible to the residents who reside there (see Section 3.12 Noise and Radio/TV Interference and Appendix B of this EA).

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**Comment 3.12-2:** *Would like more information on references cited in noise study.*

**Response:** The first three references cited in the environmental noise analysis contained in Appendix B are essentially textbooks, and should be available at the University of Washington bookstore. The relevant pages are page 184 of Noise and Vibration Control, page 134 of Noise and Vibration Control Engineering, Principles and Applications, and page 318 of Handbook of Acoustics.

The last two references would likely be more difficult to find. The reference for "Highway Noise Fundamentals" is part of the course material from a class taught by the FHWA (Federal Highway Administration) called Fundamentals and Abatement of Highway Traffic Noise. The commentor may be able to contact the Washington State Department of Transportation (WSDOT) to see if s/he can get information on the course or course materials. The relevant pages are 107 and 108. The reference "FHWA Traffic Noise Model User's Guide" is part of the user's manual for the newest FHWA-approved Traffic Noise Model (TNM). More information on the model is available at the Web site <http://www.fhwa.dot.gov/environment/fhwa-tnm.htm> or by calling the FHWA or WSDOT. The relevant pages here are 87-88.

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**Comment 3.12-3:** *Clanging noise from steel tower on BPA Rocky Reach-Maple Valley*

*345-kV line (dead-end tower off of Cedar Falls Road) (10:30 -11:30) PM.*

**Response:** This noise could have been emitted from emergency repair or from some unauthorized person/persons tampering with the tower or related transmission facilities. We will look into the matter if no authorized BPA personnel had need to be on the tower at that time. BPA appreciates this information.

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**Comment 3.12-4:** *A high variability in results of studies of attenuation of noise by trees was acknowledged in the EA. Thus, the use of the ISO 9613-2 standard to estimate attenuation may not accurately assess the conditions under consideration here. The natures of the foliage and surrounding terrain are likely factors. Also, only a removal of fifty feet of vegetation was considered in the estimate for most of the line, but removal of danger trees outside of this zone would increase the impact beyond the 1 to 3 dB increase due to loss of the 50 feet of vegetation. What mitigation would be offered if the estimate is wrong and the increase in noise level of traffic is discernible? The potential for impact is underestimated.*

*Also the EA assumes no change in the source of noise (road traffic), but by enabling further development, the new power line would contribute to an increase in traffic and a high average noise level at the source (a double whammy).*

**Response:** Although there is a variability in estimates of noise reduction due to trees, most studies maintain that vegetation does little to reduce noise unless the stand of trees is very deep (30 m [100 feet] or more) and so dense as to prevent seeing through it. The stand of trees and vegetation that would be removed as part of this project is approximately 15 m (50 feet) deep. In addition, the roadway is visible through the trees and vegetation at most locations. Therefore, no substantial reduction in traffic noise is occurring now due to these trees and other vegetation, and the estimate 1 to 3 dBA increase in noise due to its removal used in the impact analysis should be considered a conservative estimate.

Removal of additional individual danger trees would be unlikely to result in any increase in sound level over what would occur due to removal of 15 m (50 feet) of vegetation. The danger trees are widely spaced and would not comprise a noise or visual barrier between the roadway and nearby residences. Although nearby residents may perceive a change in the traffic noise following clearing for the proposed project, this could be due to a slight shift in the frequency spectrum of the noise or could be due to a change in attitude towards the source due to the removal of a visual barrier. Either way, a perceived increase in traffic noise (whether measurable or not) would not necessarily indicate a significant noise impact. The Washington Department of Transportation defines a substantial increase (and resulting impact) as an increase of 10 dBA. Removal of 15 m (50 feet) of trees and some additional scattered danger

trees would not result in anything close to 10 dBA increase, and therefore, would not result in a significant adverse noise impact.

It should also be noted that the proposed project would not increase traffic volumes and related traffic noise on local roadways or on I-90.

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## **ENVIRONMENTAL CONSULTATION AND PERMIT REQUIREMENTS (CHAPTER 4)**

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**Comment 4-1:** *All development proposals that would add more than 5,000 square feet of new impervious surfaces, would construct or modify a drainage system that collects or concentrates surface water and stormwater runoff, or that contains, or is adjacent to, a floodplain, stream, lake or wetland or other sensitive area defined in KCC 21A.24, are required to develop detailed engineering plans and technical supporting information to satisfy the eight core requirements outlined in the King County Surface Water design manual (KCC 9.04.040).*

Since the proposed transmission line would cross or is adjacent to numerous sensitive areas (streams, wetlands and wetland buffer areas), would likely exceed the minimum threshold criteria, and collect and concentrate surface water from road construction, an engineered drainage analysis should be prepared for the proposal addressing the eight core requirements in the King County Surface Water Design Manual referred to above.

**Response:** BPA would comply with the King County requirement, should BPA chose to go forward with the proposed project.

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**Comment 4-2:** *Many of King County's development codes are directed at preserving the natural environment, protecting sensitive areas such as streams and wetlands, reducing flooding and minimizing impacts to water quality. Although these comments are by no means an exhaustive list of issues, as they pertain to your transmission line project, they do highlight the lack of information contained in your EA, as it relates to King County development and zoning standards.*

**Response:** BPA, as an agency of the Federal government is not normally subject to local land use regulations, including zoning and development standards. BPA is also not subject to the Washington State Environmental Policy Act, however, BPA does strive to meet or exceed state and local development regulations where practicable. BPA is subject to federal environmental law and also the National Electric Safety Code in designing and constructing its facilities. The National Electric Safety Code requirements for minimum electrical clearances for high-voltage transmission lines are often at odds with local development regulations.

With respect to the comment of lack of information on zoning standards, the Preliminary EA (page 46) correctly stated that transmission lines are a permitted use in the zoning districts crossed by the proposed project in unincorporated King County. These are the UR (Urban Reserve) and RA-5 (Rural-Agricultural, five acre minimum) zones.

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**Comment 4-3:** *King County Department of Development and Environmental Services (DDES) has identified numerous sensitive areas as defined by King County Code (KCC) Chapter 21 A24, along the proposed transmission line routes.*

**Response:** BPA is aware of the sensitive areas crossed by the proposed transmission line. These include wetlands, wetland buffer areas, streams and areas of steep slopes.

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**Comment 4-4:** *The City of North Bend Sensitive Area regulations (NBMC 14.10) should be listed under the City of North Bend Plans and Ordinances. Gardiner Creek is a Category 2 stream with salmonids (NBMC 14.10.230) requiring a 100 foot buffer (NBMC 14.10.070). The EA should address compliance with the sensitive area ordinance and note the need to seek a public agency or utility exception (NBMC 14.10.070) where compliance is not feasible.*

**Response:** BPA is not required to apply for a public agency or utility exception because it is a Federal agency. While the agency is prevented from complying with the City's procedural requirements under Title 14 of the City's Municipal Code, it strives to meet or exceed local government's substantive standards. The substantive standards are outlined in Title 14.10.070 of the City of North Bend Municipal Code.

While BPA tries to avoid all sensitive areas when siting its electrical facilities, it also realizes that linear facilities cannot always circumvent these areas. Depending on the size and configuration of the sensitive area encountered, it is often possible to span these areas, if the requirements of the National Electrical Safety Code could also be achieved. BPA will leave any vegetation cut for wildlife habitat and would use best management practices (BMPs) to ensure that no sediments would reach surface waters in measurable quantities. BPA would also reseed all disturbed areas following the cessation of construction activities and leave erosion control devices in place until the site stabilized. BPA would comply to the maximum extent practicable with the local government agency's substantive requirements.

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**Comment 4-5:** *City of North Bend Road Standards: The City of North Bend does have road standards outlined in NBMC 19.08 but they do not address construction of electric transmission lines.*

**Response:** BPA has corrected this information in the Final EA, and appreciates this information.

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**Comment 4-6:** *City of North Bend Design and Construction Standards for Electrical and Street lighting. North Bend Municipal Code, Chapter 19.06 addresses burying wiring for all new utilities. A determination will need to be made concerning the application of this code to the new transmission line.*

**Response:** With respect to undergrounding all or a portion of the line, BPA considered this but has rejected this alternative as not meeting one of the project purposes, i.e., constructing the proposed project in a cost-effective manner. See Section 2.3 of the EA, "Alternatives Considered but Eliminated," specifically Section 2.3.2 "Underground Alternative," and also response to Comment 4-4. This is an exception recognized under Washington law.

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**Comment 4-7:** *Forest Practices: The proposed route (would) require some logging and clearing of new right-of-way, as well as removal of certain select "danger trees," in or adjacent to the proposed right-of-way. KCC 16.82 (clearing /grading) defines standards for clearing and forest practice, which are those involving removal of greater than 5,000 board feet of merchantable timber as conversions. Clearing and forest practice standards include, but are not limited to, sensitive areas, critical drainage areas, wildlife habitat corridors, and community and basin plans. In addition, Class IV - General Forest Practices are subject to forest practice emergency rules adopted March 20, 2000. The EA does not address clearing or forest practice standards as defined in KCC 16.82.*

**Response:** BPA proposes to cross a number of sensitive areas between the tap point and the proposed substation site. Sensitive areas are difficult to avoid in siting linear facilities such as transmission lines. Section 16.82.150 of the King County Code, entitled, Clearing Standards, allows certain uses under a clearing permit. While BPA is prevented from seeking a clearing permit from the King County Department of Development and Environmental Services, under the Federal Supremacy Clause of the U. S. Constitution, BPA meets the substantive requirements of the County Code since the proposed transmission line meets the test of it being "within or adjacent to existing road or utility easements whenever possible."

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**Comment 4-8:** *Many of King County development codes are directed at preserving the natural environment, protecting sensitive areas such as streams and wetlands, reducing flooding, and minimizing impacts to water pertain to your transmission line project, they do highlight the lack of information contained in your environmental assessment as it relates to King County development and zoning standards.*

**Response:** As an agency of the federal government, BPA is also interested in protecting sensitive areas and the natural environment. In siting linear facilities, BPA first tries to avoid sensitive areas where these areas can be avoided. Where they

cannot, BPA tries to span them where possible. Where they cannot be spanned, BPA attempts to minimize the impacts. BPA also attempts to meet and exceed these state and local environmental regulations, where possible.

BPA has prepared this environmental assessment under the National Environmental Policy Act of 1969, as amended, using the implementing procedures established by the U.S. Department of Energy. These implementing regulations require that EAs be concise environmental documents that either lead to a finding of non-significance or to a finding of significance.

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## OTHER

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**Comment 1:** *What is the status of the project?*

**Response:** BPA has made a Finding of No Significant Impact and now will choose between the proposed action and the no action alternative. Should BPA choose the proposed action, appraisals would be conducted, the land would be acquired, contract specifications would be developed, materials would be ordered, and bids would be solicited from qualified contractors. Beyond that, a contractor would be retained, clearing and access road construction would be undertaken and the transmission line built.

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**Comment 2:** *No reference to contacts for City of Snoqualmie, Chapter 5.*

**Response:** Chapter 5 is entitled Persons and Agencies Consulted. BPA listed the names of the landowners and identified the federal, state and local government agencies contacted during the course of the analysis. However, the names of the individuals within each of the government agencies contacted were not listed. BPA consulted with two individuals within the City of Snoqualmie during its environmental review: the City Attorney, Pat Anderson, and the Planning Director, Nancy Tucker. BPA has added the City of Snoqualmie to the list.

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**Comment 3:** *Wanted herbicide for the Echo Lake-Monroe line on their property.*

**Response:** This request was forwarded to the right-of-way maintenance specialist in the area.

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**Comment 4:** *I want to meet with the road designer on site.*

**Response:** BPA would be happy to arrange a meeting between the landowner and the road designer at the landowner's convenience.

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**Comment 5:** *Why can't the access roads come from the freeway side?*

**Response:** I-90 is a limited access highway in Washington State. As such, the only way to enter and exit the freeway would be at exits and on-ramps. The state has adopted this policy to limit the number of access points to the freeway to maintain the health and welfare of the traveling public.

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**Comment 6:** *Why don't we use the game tunnel for the access road? What happened to the access road choices?*

**Response:** BPA may use the game tunnel to access the State I-90 right-of-way from the south side of the freeway. If the game tunnel would be used, BPA would obtain the necessary permits to do so from the Washington State Department of Transportation.

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**Comment 7:** *Why do we do an EA rather than an EIS?*

**Response:** Although BPA can prepare an EIS on any proposed action at any time, BPA has prepared an environmental assessment for the purpose of determining if an EIS would be necessary. Since BPA has made a finding that, with mitigation, the proposed action would not create any significant environmental impacts, an EIS does not need to be prepared.

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**Comment 8:** *Wanted to know where their property line is between them and their neighbor.*

**Response:** This request is outside of the scope of the project. The property owner needs to either consult with the neighbor who may already have this information with respect to their common property line. If the neighbor has no information here, a survey may be needed.

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**Comment 9:** *It is no skin off of their noses to go through condemnation. They will learn from the experience and it might be entertaining.*

**Response:** Comment noted.

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**Comment 10:** *Landowner wants to know the size of the easement and any access roads whose rights would be acquired.*

**Response:** BPA would acquire a 15 m (50-foot) wide right-of-way to construct the proposed transmission line on private property. Additional rights may need to be acquired where existing access roads lie outside of the proposed right-of-way.

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**Comment 11:** *Puget tried to shove the line down their throat. Thinks Puget offered only \$2,000 but did not remember the exact amount.*

**Response:** As discussed in the Preliminary EA, BPA pays fair market value for land rights acquired from private landowners. The value of any rights secured would be established during the appraisal process.

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**Comment 12:** *They will negotiate, but history to them is delay. The development behind them as been delayed again, for the fifth time. And that is their victory. Knows they can't stop it, but they can delay it.*

**Response:** Comment noted.

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**Comment 13:** *What are the rates?*

**Response:** Both Tanner and Puget's rates have been set on sliding scales, however, the more power Tanner's customers use, the less they pay, while the more Puget's customers use, the more they pay. Tanner's rates are 5.2 cents per kWh (kilowatt-hour) for the first 10,000 kWhs per month, 4.9 cents per kWh for the next 10,000 kWhs used, and 3.9 cents per kWh thereafter.

In addition to how much power is used, Puget's rates also fluctuate by time of year. Although Puget has different rate schedules, the rates for residential service (Schedule 7) are 6.0 cents per kWh for the first 600 kWh used between October and March, and 7.5 cents per kWh for each kWh thereafter within the monthly billing cycles. For the 6-month period between April 1 through September 31, Puget charges 6 cents per kWh for the first 600 kWh used and 6.9 cents for each kWh used thereafter.

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**Comment 14:** *By expanding Tanner's service, the rates per customer will go down; landowners not realizing benefit.*

**Response:** The proposed action would not cause a reduction in rates to Tanner's customers. However, because of the proposed action, their rates would be under less pressure to escalate in the future due to a constricted supply. The proposed action should benefit both Tanner's and Puget's customers over the long term, since the

proposed substation and transmission line are designed to serve both utilities customers well into the third decade of the 21<sup>st</sup> century.

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**Comment 15:** *Who is the decisionmaker in this process?*

**Response:** The decisionmaker would be the senior vice president for BPA's transmission business line, Mark Maher.

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**Comment 16:** *Is the only public input this front-end process providing comment on the EA?*

**Response:** If BPA chooses to go forward with this project and proceeds to construction, BPA staff will continue to be available to meet and work with individual landowners and public officials.

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**Comment 17:** *If the line is ever sold, there should be an understanding that mitigation plantings be preserved.*

**Response:** Comment noted.

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**Comment 18:** *Surveys cut large swath of vegetation rather than triangulating. Large old growth stumps were leveled; these were stumps with ledger board holes in them, indicative of earlier logging practices commonly used with the crosscut saws.*

**Response:** BPA regrets that these stumps were removed in surveying for the line.

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**Comment 19:** *This project does not follow the standard review process for local projects. There is no independent party that can look at all of the information and make a decision. Public hearing is lacking. This is an internal process for BPA with "some" public input.*

**Response:** The commentor is correct, federal projects do not follow the standard review process for local projects. The commentor is also correct in stating that there is no *independent* party that can look at all of the information and make a decision. The environmental analysis group within BPA's Office of Environment, Fish and Wildlife, and independent contractors conducted the environmental analysis that was undertaken on the proposed action. While it could be stated that BPA employees who were involved in the work are not "independent," they did undertake an objective environmental review of the action, as proposed, and concluded that, with mitigation, no significant environmental impacts on the human environment would be created by project implementation (see enclosed FONSI). BPA obtains its authority from a

number of acts of federal legislation including the Bonneville Project Act, the Pacific Northwest Electric Power Planning and Conservation Act, the Federal Columbia River Transmission System Act of 1974, and the Department of Energy Organization Act of 1993, et al.

With respect to the commentor's statement that this is an internal process for BPA with "some" public input, BPA disagrees. As an agency of the Federal government, BPA is subject to the National Environmental Policy Act of 1969, as amended, on all major decisions which may have an adverse (or beneficial) effect on the environment. BPA undertook an environmental assessment under NEPA, with an extensive public involvement effort. BPA staff held one-on-ones early on with the affected government agencies and affected landowners. BPA adjusted the proposed project route, based on public input, and published and disseminated an environmental assessment for public and agency review and comment. BPA also held an open house mid-way through the comment period to take comments on the draft environmental document as well as make staff available to respond to questions or to provide additional environmental information. The final environmental assessment responds to the comments received; revisions to the preliminary environmental assessment have been made based on public and agency input. See also response to Comment 16.

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**Comment 20:** *Who is held accountable with respect to mitigation? There is no oversight to make sure all mitigation is done.*

**Response:** BPA, as a federal government agency, is accountable for its own actions or inaction, and the agency holds the contractor accountable for its actions or inaction's, where a contractor is retained to do work for Bonneville, at Bonneville expense.

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**Comment 21:** *Need a group of impacted landowners who would assess whether BPA mitigated what it said it would in the EA.*

**Response:** Comment noted. The formation of such a committee would be up to the interested parties.

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**Comment 22:** *Will all of the comments be included in the Final EA?*

**Response:** The Final EA includes all of the comments on the Preliminary EA received during the review period, including any that came into the agency following the completion of the review period and prior to the publication of the Final EA. The comments came into the agency via the postal service, e-mail messages, phone calls and during public meetings and interviews.

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**Comment 23:** *Need a bridge between the BPA and the affected landowners. You'd have much fewer irate calls.*

**Response:** BPA welcomes open dialog between affected communities where the need for additional transmission facilities and concerned citizens coincide. BPA believes strongly in involving the public in agency decision-making where the public would be affected by the proposed facilities. BPA tries to be a good neighbor to the public when siting future facilities necessary for the continued safe and reliable operation of the power system in the Northwest, and in meeting our obligations and in achieving our public purposes as the sole federal power marketing agency here in the Northwest. The individuals most closely associated with the proposed action would be the project manager, the project engineer, and the land representative. The project environmental lead is also available to entertain any questions/concerns of an environmental nature related to the proposed project.

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**Comment 24:** *How many other things can be built under the transmission lines? Cable, phone, other distribution lines?*

**Response:** Before any utilities could hang any facilities on BPA poles, they would need to get permission to do so from the underlying property owner on private property. With respect to public rights-of-way, this permission would emanate from the land manager, such as the state or local government agencies (King County or City of North Bend).

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**Comment 25:** *It bothers me that late July is the Final EA, and late July is the final decision that doesn't allow for public input.*

**Response:** Following the release of the Final EA/FONSI, BPA would be in a position to make a decision between the "action" and the "no action" alternative. A FONSI is an acronym for a "finding of no significant impact." BPA must make this finding before going forward with any action requiring an environmental review that would not be considered a major federal action. It is likely a decision would be made on the proposed action within the next week or so.

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**Comment 26:** *Interesting to see that Puget wanted to start work within one year of notice of project when they were doing it, and when we (BPA) comes in, it takes two (plus) years.*

**Response:** As a federal government agency, BPA must undertake an environmental review on any action which could have an adverse (or beneficial) affect on the

environment, under the National Environmental Policy Act (NEPA) of 1969, as amended. This level of federal legislation typically takes longer to complete than local government environmental reviews. In addition, BPA is subject to other federal legislation that private utilities, such as Puget Sound Energy are not subject to. These would include such legislation as the Historical Preservation Act, the Endangered Species Act, et al.

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**Comment 27:** *Existing 500-kV tower access cell antennas. Going in and out and too many locks interfere with livestock.*

**Response:** Comment noted.

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**Comment 28:** *What are the types of gates available?*

**Response:** BPA installs three types of gates on its access roads, all of which are 3 1/2 m (12 feet) wide. Two of the gates are made of tubular steel, one of which is wrapped in wire mesh. The other is made from steel panels.

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**Comment 29:** *Requests that any leftover soil from construction be dumped in their back yard.*

**Response:** The project manager/engineer would know if any leftover soil would be available should BPA decide to construct the project. BPA would contact the landowner as soon as this information would be available.

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**Comment 30:** *The Preliminary EA does not adequately address impacts related to human health, environmental impacts related to removal of trees and other vegetation, aesthetics and property value impacts, all of which could be avoided by burying the line. And because burying the line is technically feasible, the commentor requests that BPA conduct a study as to the costs and feasibility of burial of the line in whole or in part. Burying the line would retain vegetation, preserve the aesthetics of the area, and avoid the adverse health impacts of locating the line close to the homes on Alm Way.*

**Response:** Undergrounding transmission lines is technically feasible, and has been undertaken in many areas of the country. In response to a request by a resident within the project area near 372<sup>nd</sup>, BPA looked at undergrounding a portion of the line along North Bend Way, and discussed its findings in Section 2.3.2 of the preliminary EA. While technically feasible, it was dropped from further consideration due to costs.

With regard to the statement that the Preliminary EA did not adequately address impacts related to human health, environmental impacts related to clearing, aesthetics

and property values, BPA is undertaking this EA under the National Environmental Policy Act of 1969, as amended, receiving guidance on the content and length of such environmental documents from the Department of Energy. DOE's guidance recommends that EAs be concise, tailored to the proposed action, and normally not exceed 20 to 30 pages in length. BPA has attempted to undertake a complete environmental review of the proposed action without incorporating too much extraneous detail in the document.

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**Comment 31:** *Because of the enormity of the adverse health effects, as well as environmental, aesthetic and property value impacts, the proposed project would have on the Snoqualmie Valley Community, I respectfully request that a full environmental impact statement (EIS) be prepared before this project goes forward.*

**Response:** BPA has prepared an environmental assessment on the proposed action to determine if the action, as proposed, would create any significant environmental impacts. None were found, so BPA has prepared this Final Environmental Assessment/Finding of No Significant Environmental Impact, and will soon make a decision on whether to select the Proposed Action, or the No Action Alternative. No EIS will be prepared.

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